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AN EXPERIMENTAL STUDY OF THE EFFECTS OF TAPE LISTENING ON CERTAIN MODES OF FUNCTIONING IN STUDENT COUNSELORS.

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THIS STUDY DEMONSTRATES THE EFFECT OF LISTENING TO TAPE RECORDINGS ON STUDENT COUNSELOR'S (SC) COGNITIVE BEHAVIOR. SIX 5-MINUTE TAPES WERE VALIDATED TO PRESENT THREE KINDS OF CLIENT RESPONSES TO THE COUNSELOR--(1) NEGATIVE AND HOSTILE, (2) POSITIVE AND SUPPORTIVE, AND (3) NEUTRAL. AFTER LISTENING TO THE TAPES, THE SUBJECTS WERE ASKED TO PERFORM FIVE COGNITIVE TASKS TO SEE IF THE TAPES INFLUENCED PERCEPTION AND PERFORMANCE. ANALYSIS OF VARIANCE SHOWED WORD PERCEPTION, NUMBER PERCEPTION, AND CODING SIGNIFICANTLY ALTERED BY THE TAPES OF DIFFERENT AFFECTIVE TONES. THE ORDER OF TAPE PRESENTATION ALSO ALTERED TASK PERFORMANCE, ESPECIALLY ON NUMBER PERCEPTION AND CODING WHEN HOSTILE TAPES WERE HEARD FIRST. ONE IMPLICATION OF THESE RESULTS IS THAT THE SC'S INITIAL COUNSELING EXPERIENCE SHOULD BE POSITIVE, NOT HOSTILE, SO LEARNING WILL RESULT. FINDINGS ON GROUP DIFFERENCES ACCORDING TO AGE AND EXPERIENCE OF THE SC'S CONFLICTED WITH THOSE OF PREVIOUS RESEARCH INDICATING THE COMPLEXITY OF THE COGNITIVE VARIABLE. FURTHER RESEARCH IS NECESSARY TO DETERMINE THE RELATIONSHIP OF COGNITIVE BEHAVIOR TO THE EMOTIONAL REACTIONS OF THE COUNSELOR. (NS)

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Dissertation

AN EXPERIMENTAL STUDY OF THE EFFECTS OF TAPE LISTENING ON THE BEHAVIOR OF STUDENT COUNSELORS

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CHAPTER I: INTRODUCTION

This chapter will provide an overview of the need for the study, a statement of the purpose of the study, and a rationale for the hypotheses to be tested.

The need for well controlled research into various aspects of counselor behavior has been repeatedly expressed by reviewers and researchers for a number of years. Korner (1950) pointed out that very few studies existed which dealt with the problem of how client verbalizations affected the counselor's responses (p. 209). Cottle (1953) criticized the sporadic and confused character of work done and remarked on the lack of factual studies concerned with counselor characteristics. Stoughton (1957) also called for more specific studies on personal attributes associated with effective practice and emphasized the need for a consideration of techniques of developing personal competencies. And Hill and Green (1960) indicated the necessity for clearly defined criteria of effective practices.

The authors of more recent and specific research have responded to some of the earlier criticisms but have also noted that research is still lacking. O'Hern and Arbuckle (1964) stated that, "Research on the selection of school counselors has been limited in both scope and specificity"

(p. 572). And Patterson (1964) reported in the same year that, ". . . there is almost nothing on the supervision of counseling" (p. 471). Parker and Kelley (1965) supported this conclusion reporting that few studies have dealt with the effect of differential educational methods in counselor training.

Patterson's recent review of the literature reported in the Annual Review of Psychology 1966 reiterates many of the concerns previously mentioned. Specific criticisms were directed at a lack of adequate controls and a lack of consistency in outcome criteria. Additionally, Patterson called for more direct measures of attitudes or behaviors as opposed to the prevalent tendency for researchers to develop new instruments which measure behavior in an indirect way.

A major concern ot this study is related to the effect of a training technique on the behavior of student counselors (hereafter referred to as SCs) as measured by relatively simple behavioral variables. It is important to consider, therefore, some of the effects of training on the SC.

The most prominent characteristic of the SC is that he is threatened and anxious during training and that this influences his ability to learn and to deal with counselees. Kirman states that:

> With every client he sees he is confronted with his relative lack of skill and experience. Such

> a student tends to see each new counseling experience as another challenge to his claim to perfection. It is very difficult for him to function adequately under such tension and he must therefore take steps to eliminate this source of inadequacy (1963, 74).

The author continues by pointing out that client centered techniques are usually resisted when presented and that students erect emotional barriers to ward off "frightening ideas." Frequently SCs demonstrate a knowledge of what is wrong with the client instead of contemplating their own degree of understanding of the client. Kirman further observes that SCs often illustrate a rigidity which prevents them from thinking about client comments without evaluating them as right or wrong. Emotional expressions create serious problems for SCs because they become, "disoriented intellectually, impairing their ability to understand even simple concepts" (p. 73).

Kemp has reported that emotional attitudes of dogmatism influence critical thinking and are relevant to the function of change during the training of counselors (1962, 157). The results of his research revealed that SCs who were more dogmatic performed better in hypothetical than real life situations in terms of flexibility and appropriateness of response to a counselee. He states that:

> . . . the close minded, who are less in contact with their sensory and visceral stimuli, who to varying degrees narrow or distort meanings in relation to

> their early beliefs, and/or authority figures, are more inclined to review their responses in light of the situation. Therefore, they adjust their thinking to the degree that they feel is acceptable and in accordance with the perceived demands of the instructor and the environment (1962, 156-57).

Ekstein and Wallerstein (1958, 137-77) have also commented on SC behavior emphasizing that the problem of training should be understood in terms of the neurotic characteristics which the SC brings to supervision. Blocks to learning are considered to be a function of the personal characteristics of the SC.

On the other hand, Reiss (1960) has convincingly emphasized the threatening role of the supervisor in the SC's life. He states that:

> To a large extent he has the power to influence the career and the real life situation of his Supervisee. This at one and the same time, gives him a nontherapeutic authority status and makes him an anxiety-provoking threat to the student (1960, 115).

And more recently, Russo, Kelz, and Hudson have supported this belief with research concerning closeminded counselors. They have indicated that the threat of authority figures will, ". . . distort his perceptions, influence his evaluation, and direct his actions" (1964, 76).

Another source of threat is the tape recorder which is used in stimulating self awareness. Through providing verbatum counseling records, the performance of the SC during an interview can be analyzed. Demos has stated that:

> So ubiquitous has become the use of tape recordings that it is questionable that there are any counselor training programs in the country that do not use taped interviews in some way (1964, 704).

Roughly ten years prior to Demos' paper, Gill, Newman, and Redlich (1954, 110-30) commented in their text that the tape recorder was a valuable technique in training but that it was very threatening to the therapist who was being recorded. The result was that the therapist's performance was usually markedly inferior.

Anderson and Bown hold a similar position stating that the tape listening experience is ego-involving and that the associated supervisory conference is most threatening (1955). Patterson has reiterated this point more recently stating ". . . the playing of his tapes for someone else is threatening to the student"(1964, 50).

One of the few empirical studies of the effect of the tape recorder was reported by Roberts and Renzaglia (1965). It revealed significant changes in response tendencies of both counselor and client when they were recorded secretly, as compared to when they knew that their conversations were being taped. The results of the study indicated that the counselor became significantly less client centered when he believed that he was not being taped. This result implies that either the presence of the tape recorder or the fact that what was being recorded was to be evaluated in terms of the SC's effectiveness significantly influenced the response tendencies of the counselor.

While subtle changes may be present in the student counselors' reactions to listening to tapes of counseling sessions they were not apparent in the research of Walz and Johnston (1963) which dealt with SCs viewing video tapes of their own counseling sessions. However, the design of the study would only permit the authors to speculate about the presence of negative and educationally harmful reactions to the experiences which they termed as distinctly affective in quality. The results of the Roberts and Renzaglia study challenges the efficacy of such speculation.

To summarize, a survey of the literature has shown the following: (1) that there is a paucity of in depth research associated with counselor training, (2) that there is reason for concern about the stress and anxiety which many counselor educators have observed to be present in counselor training, and (3) that the tape recorder as a common-place training technique may be responsible for elevating the stress level to the degree that SC performance is less efficient or appropriate.

Several studies have attempted to evaluate counselor behavior in relation to various types of affectively oriented situations and these will be reviewed in Chapter II. But there appears to be no research which has focused on the influence of tape listening on the non controllable cognitive behavior of student counselors.

Purpose

Accordingly, the purpose of this research is to study the effect of listening to tape recordings in which the client is either hostile towards the counselor, supportive of the counselor, or neutral in expressed and implied affect.

The dependent variables are cognitive tasks which are performed subsequent to each tape listening experience. The tasks are: (1) recognizing words exposed on a screen for 0.01 seconds, (2) recognizing number combinations projected in a similar manner, (3) determining the closure threshold of a triangular figure projected on the screen for 0.10 seconds, (4) reading orally into a tape recorder, and (5) performing a number-code task.

Hypothesis

The general research hypothesis for this study would predict that listening to tapes of client comments with differing affective qualities would differentially affect the subsequent cognitive behavior elicited by the five cognitive tasks.

Rationale

Because the purpose of this study is concerned with the effect of tape listening on cognitive behavior, the central focus of the rationale concerns the deeper issue of the interaction between emotional and cognitive processes.

Emotional processes are defined as energy discharges which are viscerally experienced by the individual as feelings or strivings (Rapaport, 1950, 26-27).

Cognitive processes are defined as those learned processes which receive sensations from external or internal sources, code them, analyze their meaning through searching the memory for a suitable word or concept analogue, and articulate them. This definition is consistent with the work of Sarbin, Taft, and Bailley reported in the following pages.

Rapaport's survey of the literature relating to emotions and memory has indicated quite conclusively that emotions affect the memory process. Additionally, he has suggested that memory influences all behavior because behavior is based on past experiences from which we have learned (1950, 237). It can be implied from this suggestion that while the behavior of the individual is based on his perception and cognition of the environment, the emotion associated with the relevant memory traces affects the way the environment is perceived and cognized.

Sarbin, Taft, and Bailley (1960) have developed a model for describing the inferential behavior of the clinician in more purely cognitive terms.[1] They state:

> . . . cognition is regarded as a judgment or inference in which objects are perceived as they are because they are regarded as instances of a certain class of events with certain hypothesized characteristics. As an inference these cognitions must be regarded as mediated, although the preexisting cognitive structures of the perceiver introduce a certain amount of immediacy into the response (1960, 32).

The authors postulate the presence of "modules" which are cognitive organizations of relevant data related to objects, situations, or people. These hypothetical constructs are the basis for most action in or with the environment. Relating to the development of modules they state:

> From an early age, a person learns to recognize and classify--sometimes with linguistic labels--his own internal reactions. Learning to recognize one's own affective responses is an important part of the acquisition of modules (1960, 119).

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[1] It should be noted that Clinical Inference and Cognitive Theory is the only text which recognized the need for understanding the counselor, and proposed a model which describes how the counselor perceives and cognizes his client.

And in the mature individual, they see the modules related to self concept as influencing his behavior with others. They state:

> He has a set of beliefs about his own capacities, experiences, motivations, aspirations, and attitudes, much of which will be organized in a manner similar to the beliefs which he uses when he observes the behavior of others (1960, 119).

In terms of adaptive capacities they indicate that:

> A fuller description of the functioning cognitive organization would deal with the process in a longitudinal way, recognizing that the person is constantly bombarded with stimulation, some of which renders the existing modules inefficient and even nonadaptive. The most efficient utilization of incoming sensory information will have residual effects on existent organizations by changing the relationship between the modules (1960, 119).

These quotations show that the emotions are usually viewed in the context of their cognitive articulation. The authors seem to give less emphasis to the notion of emotions being a dynamic discharge of energy which the individual experiences viscerally.

This study favors Rapaport's viewpoint and holds that while the behavior of the individual is based on his perception and cognition of the environment, the emotion associated with the relevant memory traces affects the way the environment is ultimately perceived and cognized. Stated most simply: the regnant process in human behavior is emotional, and this process influences the individual's perception and cognition of all facets of his environment and himself.

This study further asserts that both emotional and cognitive processes are powered by the same energy system which is limited in quantity. If emotions are the reigning basic determinant of behavior, it would be true that an existing hierarchy or priority system would exist. The system would first allocate energy to deal with the emotional feelings and experiencing of the individual and second, provide energy to deal with the less relevant cognitive processes.

Crying is an emotional experience which demands energy. The cognitive articulation of the fact that one is crying, the associated emotions, and the reason for the tears would follow when more energy was available. On the other hand, the conscious effort (albeit emotionally motivated) at articulating an unclear feeling associated with the death of a parent might also result in crying when the feelings were fully clarified and articulated.

Viewing the mental functioning of the individual in a general way, the psychic system is regarded as dynamic: functioning under continually varying levels of stimulation from external and/or internal stimuli. Lashley's description of internal dynamic behavior is meaningful in this regard. He states that input,

> . . . is never into a quiescent or static system but always into a system which is already actively excited and organized. In the intact organism, behavior is the result of interaction of this background of excitation with input from any designated stimulus (1951, 112).

The affective and cognitive processes which compose the psychic system are interacting, one provoking action (or inaction) in the other and/or vice versa. During a period of increased emotional activity in the individual, less energy is available for cognitive processes which are irrelevant to the current internal emotional experiencing of the individual. Lister has taken a similar position stating that the emotional experiences of the individual are "preconceptual" (1966, 55) but that they can aid the individual in the eventual conceptualization and articulation of meaning.

It is true that many cognitive tasks (or routines, to use Bruner's newer conceptualization [1964]) may be so reflexive or automatic as to require very little energy for their successful completion. However, under higher levels of excitation or stress, the emotional processes may require so much energy that even simple tasks will be forgotten or performed poorly. Thus, it would be easy to understand how an individual who was emotionally aroused could drive through a red light because energy was not available for its cognition.[1]

SC behavior viewed in the context of the purpose and rationale of this study would be as follows: when the SC listens to tape recordings which are either hostile, supportive, or neutral in terms of the affect expressed towards the counselor and his role, the accompanying internal emotional reactions will be different. The measurement of these will involve asking the SC to perform the tasks previously mentioned subsequent to the tape listening experience. The rationale would state that with those situations which were more emotionally meaningful and important there would be concommitant changes manifest in their performance of the cognitive tasks.

Summary and implications

This chapter has reviewed the literature pertinent to the need for the study. It has further stated the purpose, general hypothesis, and rationale for understanding the SC behavior under examination.

The results of this study will be helpful in several ways. Practically, it will provide information relevant to how the SC behaves subsequent to listening to tapes containing different types of client affect. Implications concerning the use of tape recorded client comments both as a research and training device will then be possible. Theoretically, the results will help to enhance understanding relative to the degree of interaction of emotional and cognitive processes in the SC. Implications for refinement of the rationale as well as for further testing of it will also be possible.

---

[1] While some theorists differentiate the perceptual processes from the cognitive, Bruner (1964) has shown that cognition is necessary for something to be perceived.

Overview

Research related to the purpose and design of this study will be reviewed in Chapter II. The Methodology will be detailed in Chapter III. Statistical results will be presented in Chapter IV. Analysis and Conclusions will be presented in Chapters V and VI respectively.

CHAPTER II: RELATED LITERATURE

As has been previously stated, the intent of this study is to evaluate SC performance on a variety of cognitive tasks subsequent to listening to tapes of different affective qualities. It should be clear that while this study assumes that emotions are evoked by the tape listening experience it does not assume that anxiety is the concomitant reaction to tape listening.

This assumption and its qualification regarding anxiety sharply delimits the number of studies which are relevant to this one. A survey of related research reveals that there are few studies which are concerned with the purpose outlined above. Consequently, it has been necessary to draw on material which is mostly peripheral; much of it associated with the measurement of anxiety or stress.

For this reason, the organization of this chapter is in two parts. Part I deals with research in Counselor Education which has used similar independent variable stimuli. Part II deals with those studies which have used the tachistoscope, or oral reading, or coding as dependent variable measures of the effect of emotions on behavior. Independent summaries follow the reviews of discrete segments of the literature.

Part I: The Independent Variables

Studies using a client actor

Russel and Snyder (1963) reported a study conducted by Russel (1961) which used hostile and friendly male client-actors. In their review of the literature they state that

> No investigations were found which directly related the counselor's level of experience to the anxiety produced in certain kinds of interviews (1963, 359).

These two independent variables (experience and affect type) were measured in relation to four indices of anxiety. Two were noncontrollable: palmar sweat and eye-blink rate. The other two were judgments of verbal anxiety as rated by external observers and client-actors.

The results of this study revealed that hostile client behavior evoked significantly more anxiety in counselors than friendly client behavior for both experienced counselors ($P = 0.001$) and inexperienced counselors ($P = 0.005$) on eye-blink rate and the two ratings of anxiety.

A limitation in this study is Russel's use of only male client-actors. This means that the effect of male hostile clients cannot be compared to a female counterpart in relation to the differential impact each would have on counselors of the corresponding or opposite sex.

It is also significant to note a strength of the study. All interviews were judged for authenticity and role consistency played by the actor-client. The ratings by the judges were evaluated statistically and showed significant concurrence.

Using a similar independent variable system, Heller, Meyers, and Kline (1963) reported a study in which four actor client roles were presented: dominant-friendly, dominant-hostile, dependent-friendly, and dependent-hostile. Excerpts from each interview were rated by independent judges and confirmed, although not statistically, the consistency of role for the first three of the four interview types, the fourth was accepted because it represented neither a hostile nor friendly client role consistently (1963, 120). These authors used only four actors, and did not control for the sex of the client.

The dependent variable in this study was a modification of the Interpersonal Check List (Leary, 1956) which was used by trained judges. Results of the study showed that hostile clients evoked significantly more hostile responses, friendly clients evoked significantly more friendly responses, and dominant clients evoked significantly less friendly responses (all $P > .01$). However, hostile clients were not found to evoke significantly more anxious interviewer responses. This result, which is in conflict with the findings of

Russel and Snyder, is most likely due to the different types of instruments employed and the lack of standardized roles being played by the client-actors (1963, 120).

Gamsky and Farwell (1966) reported a study by Gamsky (1965) which also evaluated the effect client demeanor had on counselor behavior using hostile and friendly client-actor roles. In addition, he controlled for sex of client-actor. Similar significant results regarding hostile and friendly counselor responses were present when tapes of the sessions were analyzed.

Two other findings were also reported. First, it was learned that hostility directed at the counselor evoked significantly different counselor verbal reactions from hostility directed at others. A second finding revealed that counselor sex was differentially related to verbal response and that client-actor sex played an "unclear" role in effecting counselor response. The latter findings, although inconclusive regarding sex of counselor and client-actor represent an important contribution because Heller, Meyers, and Kline and Russel and Snyder did not include a consideration of this variable in their studies.

Studies using a tape recorded independent variable

A second technique for studying counselor responses involves the presentation of recorded client comments to subjects. This approach has the advantage of providing an absolute control of the stimulus content. The primary limitation, of course, is that the situation is less realistic.

Paar (1957) developed two tapes, one male and one female in which the counselor comments had been removed and the silence expanded to not less than fifteen nor more than thirty seconds. During these silences the therapists were expected to respond to the client comments. No control of type of interview was present as the interviews were from real cases and considered to be "standard."

The independent variables in this study actually were the instructions, which were designed to evoke threat. The dependent variables were analyzed around threat--no threat conditions and were similar to those used by Russel and Snyder: palmar sweat and an analysis of the verbal responses of the therapists. Results of the study indicated that no significant differences were found as a function of threat on either variable. Some of the major reasons for this might be that the sample was small (N = 16), the therapists were all trained, and the interviews were not differentially oriented in terms of the affect expressed by the client.

An interesting study by Tirnaur (1959) used tape recordings which included the same client comments expressed with a high and low degree of anxiety. The subjects were also exposed to stressful instructions which asked that they respond to the client comments and indicated that their comments would be judged.

Responses were analyzed and showed a significantly lower number of focusing and directing responses with either highly anxious clients or more stressful experimental conditions. Clearly the tape effects in this study seemed to have a considerable influence on the counselor response. This further supports the conclusion that the lack of significant results in Paar's study may be due to the fact that affective content (or lack of it) influences the counselor response to taped client comments.

Chapline (1964) has used the tape recorder to present client comments from three different client situations in a manner quite similar to that used by Paar. The content of the three interviews was not systematically varied in terms of type of problem or expressed affect.

Responses to client comments in this case were written during silences of thirty seconds and later analyzed by a panel of judges. No major significant differences were present in relation to age and sex variables. However, more experienced counselors did respond in a significantly different fashion from individuals who were enrolled in graduate education courses in administration.

Bohn (1964 and 1965) employed tape recorded client comments in an effort to evaluate how dominance and experience variables influence counselor behavior. Three prototypes of interviews were developed with specific content differences: hostile, dependent, or typical. No judging of the interviews was performed to rate them in accordance with the defined types. All the clients were male.

During thirty second silences, the subject was expected to select one of four responses which were presented in a booklet. The responses had been prejudged according to criteria so that results could be analyzed in terms of the relative frequency of the various types of responses which were selected. The basic classification of responses was either "directive" or "non-directive."

The findings of this study showed that more experienced counselors responded with significantly more non-directive responses. However, the "inexperienced" counselors were undergraduates enrolled in a college course in Introductory Psychology; and generalizations regarding experience should be taken with caution.

In addition to the above result, significant differences were again found when responses under the three tape conditions were compared. The results were similar to those reported by Heller, Meyers, and Kline.

While other studies using the tape recorder could be cited, their relevance to this study is less significant. The evidence reported here can be summarized as follows: (1) the presentation of stimulus material in the form of client-actors or taped client comments results in differential counselor responses when the expressed affect is varied; (2) the experience of the counselor affects his response tendencies to clients expressing affect to him by either of the above modes; and (3) sex and age variables seem to have some influence on counselor response tendencies.

What is clearly not present in this survey of the literature are studies which attempt to evaluate the effect of affective stimuli on less controllable responses of counselors; although, this was recommended by Paar in 1957 (p. 20). It is true that Russel and Snyder did study palmar sweat and eyeblink rate of counselors showing that there were some distinct differences as a function of the tape affect; but this appears to be the only successful study of this sort reported in the literature.

In view of the number of studies which have shown differences in verbal response levels to tapes of different affective tones, it would seem important to ask the question of how basic the differential response patterns are in the SCs' behavior.

It is for this reason that this study has selected rather simple types of cognitive tasks which the SC will be asked to perform subsequent to his exposure to a tape with a specific affect. Should significant differences be found, their implications for a theory of emotional and cognitive interaction in the counselor would be important as would the implications for the education of the counselor. If significant debilitating reactions occur, then it would be important to develop a system of controlling the affective exposure of the SC so that he is never exposed to more affect than he can deal with in an efficient way.

Part II: The Dependent Variables

Tachistoscopic experiments

The tachistoscope is an instrument which is used to present material visually for specific, highly controlled, brief periods of time. Research using this instrument has been considerable because it allows one to study the individual's capacity to perceive words, numbers, figures, pictures, etc., while varying conditions such as exposure duration, illumination, focus, size of image and location. In addition, the stimulus can be varied systematically in terms of word length, frequency, context, and word meaning.

A large number of studies have been concerned with the perception of words as a function of these variables. And two theoretical positions have emerged to explain the phenomenon. Representative of the clinical position is the research of McGinnes and Sherman (1952) who postulated the existence of a repressive reaction which occurs subsequent to the presentation of threatening stimulus words. Forrest, Gordon, and Taylor (1965) represent the experimental psychologists' belief which holds that perceptual malfunctions are probably due to an inability to shift cognitive sets.[1]

However, studies which are concerned with the effect of pre-existing or pre-induced emotional processes on the perceptual-cognitive responses to tachistoscopically presented material are infrequent. Those which have been performed have focused on the effects of threat or anxiety on behavior, and, consequently, are limited in their applicability to this research.

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[1] Comprehensive reviews of the research have been reported by Brown (1961) and Erikson (1960). Brown represents a strongly experimental viewpoint which holds that methodological problems are responsible for much of the significant research on perceptual defense. Erikson holds a more temperate view which also criticizes methodology but repects the notion that perceptual defense may be an appropriate explanation of the observed phenomenon.

Cowne and Beier (1954) reviewed previous literature and concluded that:

> Investigations to date . . . have led to a tentative generalization that threat tends to disrupt both the accuracy and speed of perceptual report (1954, 178).

As a result of their review, they attempted to study the effect of pre-warning regarding the presentation of threatening words. The study revealed that the pre-warning probably elevated anxiety because it resulted in a significant increase in number of trials required before correct perception of the word was possible. They concluded that threat adaption was an unconsciously controlled process which was influenced by psychological reactions. A suggestion for further research was that it would be fruitful to study the relationship of threat adaption to personality variables.

Wall (1957) studied the perceptual responses of college students by comparing the pre-existing condition of threat or non-threat of failure. Two groups were studied: one of college students on terminal probation because of low academic standing; and a second of academically successful students. It was found that a significant inverse relationship was present between perceptual illumination thresholds of positive and negative words and scholastic success at the end of the semester. In other words, college students who failed at the end of the semester required a significantly higher illumination level in order to correctly identify either positive or negative words exposed tachistoscopically.

Kaswan (1958) has also reported a study which used the criterion group technique. Two groups of hospitalized patients were selected, one being composed of schizophrenics and the second being normal patients admitted for surgery. Significant differences were found in the ability to perceive groups of figures when they were presented tachistoscopically. This was determined by ascertaining the exposure time required for correct perception of the figure groupings. Kaswan states:

> The longer time required by these subjects (schizophrenics) to see the correct groupings supports the assumption that their response latencies extend to this very basic level of the organism's translation of the environment (1958, 137).

Although this conclusion emanates from a comparison of the normal and schizophrenic subject, it can be implied that an individual can either misperceive or not perceive and cognize significant elements of his environment if his emotional reactions are too intense. Stated simply, emotional states or reactions can influence the amount of information with which the individual can cope.

The theoretical rationale for this study strives to explain how the processing of information can be modified by emotional reactions. And the purpose of this study is to evaluate whether information processing in the SC is affected by listening to tape recorded client comments of different affective tones.

A more recent study by Longnecker (1962) was concerned with the effect of anxiety and motivation on the ability of subjects to identify embedded figures. The results of his research revealed that highly anxious, low motivated subjects performed most poorly and highly motivated, low anxious subjects performed best.

Longnecker uses the theories of Mandler and Sarason (1952) to explain the phenomenon. The theory is based on the assumption that anxiety is capable of eliciting many responses. Consequently, irrelevant responses will interfere with relevant responses when the subject is anxious; and anxiety then functions as a negative drive which inhibits effective functioning.

The rationale for this study is compatible with the response relevance theory. It will be remembered that this study proposes that the individual functions with energy which is limited, and that a natural hierarchy determines that emotional processes will draw on available energy first. Consequently, when anxious, the individual will energize responses related to the anxiety because it is an emotional process.

Non-relevant tasks, such as identifying embedded figures, will not be performed as well because energy is not allocated to accomplish this task first. Instead, the reigning process at this time is emotional and energy is being drawn out to deal with the anxious feelings.

It is possible for unrelated cognitive tasks to be accomplished with no difficulty. But it depends on the amount of energy available and the amount required by this second task of lesser relevance. Naturally, the more complex the task, the more energy it requires for completion, and the less likely it is that it will be accomplished efficiently if the individual is contending with emotional experiences simultaneously.

A number of studies have been reported which are concerned with the effects of anxiety on closure. Of particular significance is the repeated reference to the debilitating effects of anxiety which result in poorer, less efficient functioning. These studies are briefly reviewed below and significant remarks have been quoted. Those comments which support the position taken in the rationale for this study have been underlined.

Korchin and Basowitz (1954) performed a study in which subjects were paratrooper trainees. Stress was defined by hippuric acid secretion and two groups were defined as high stress (high acid secretion) and low stress. Subjects were then tested periodically: before practice jumps, after jumps, in the evening, and subsequent to completion of the training program.

The closure test was tachistoscopically presented circles, some missing a seven degree segment of the circumference. Subjects were asked to indicate whether the circles were closed or open. The results of their research were summarized as follows:

> . . . not only do the stress subjects perform more poorly generally, but their errors seem to reflect less discrimination and a greater inability to resist the "pull of closure." This finding seems to us to have importance theoretically, since we conceive the anxious person as being characterized at least partially by cognitive differentiation. In this state one would expect the ability to maintain the level of alertness and vigilance necessary to offset closure to be reduced (1954, 501).

Smock (1955a and 1955b) has reported that stress and an intolerance for ambiguity is related to closure. Smock used fifteen drawings of five stimulus objects, each one of the drawings being more complete than the previous until the fifteenth which was complete. Stress was defined as a hostile rejecting attitude of the experimenter and closure was defined as the point at which the subject correctly identified the picture.

The results of his research revealed that the difference between stress, no-stress conditions resulted in an $F > P_{.05} < P_{.10}$. Nevertheless, Smock felt that his study merited the following conclusion:

> . . . it has been demonstrated that stress results in an inability to withhold responses to a particularly structured perceptual field until adequate cues are present for the most appropriate response (1955a, 182).

Smock's second paper (1956) was concerned with the rigidity with which pre-recognition hypothesis would be adhered to under stress. Using a separate analysis of the same data he was able to further support his assertion that stress enhances rigidity. He stated:

> . . . . It was hypothesized that psychological stress will lead to the adherence of pre-recognition "hypothesis" and consequently a retarded recognition of stimuli that deviate from the familiar. The data reported in this study on the effects of stress on the recognition of incongruity lend support to this hypothesis (1955b, 356).

And a further conclusion regarding cognitive rigidity is also relevant:

> . . . it is inferred that stress or anxiety result in cognitive and perceptual processes that tend to preserve a "familiar" perceptual and behavioral field for the individual (1955b, 356).

Moffit and Stagner (1956) were also interested in the effects of stress on performance. They presented squares with X's in the center which were either open or connected to the corners. A tachistoscope was the mode of presentation.

The results of their study supported those of Smock and lend weight to the viewpoint that the closure process is a valid cognitive phenomenon which can be reliably anticipated even when the experimental methods are quite different. Their theory of what happens to cause this phenomenon is informative:

> Specifically, if S samples a broken circle or other incomplete figure hastily, it is more likely that he will fail to sample the "gap" and consequently will perceive the figure as complete when he is operating under stress conditions. The influx of visceral afferants interferes with adequate sampling of the visual field (1956, 356).

To summarize, the research on perceptual-cognitive processes seems to focus on behavioral modifications which are influenced by existing or experimentally induced stress or anxiety. The results of these studies support the position that emotional reactions result in changes in cognitive behavior. Furthermore, the theoretical explanations of why these results occur does not contradict the position taken in this study.

Research in oral reading

A review of the literature reveals that few studies have sought to examine the effects of experimentally induced emotional experiences on an individual's oral reading accuracy or rate of reading. However, a few studies have been reported which lend support to the idea that reading is influenced by emotional characteristics and that it is a complex cognitive process. Because of the paucity of research, several relevant studies of silent reading will be reviewed.

First, the topic of personality and reading. Kress (1956) performed a study which sought to evaluate good and poor silent readers on a large number of variables. The results of his study indicated that poor readers tend to (1) maintain previously acceptable conclusions in spite of the introduction of conflicting evidence, and (2) to lack flexibility and versatility in conceptualizing what they read. In addition, they tended to need success and to avoid failure whenever possible. This conclusion reveals the existence of a tendency towards closure which is affected by anxiety--a phenomenon already noted to be present in the studies of Korchin and Basowitz (1954), Smock (1955a and 1955b), and Moffit and Stagner (1956).

That personal-emotional factors influence reading has also been observed by Abrams (1956) who indicated that ego functioning significantly influenced reading ability. Poorer readers were regarded as experiencing more anxiety which inhibited their attentiveness and made them less able to respond appropriately to the text.

Veltfort (1956) concluded from her research with children that poorer readers were more neurotic. She further described these children as significantly less self assertive and recommended that further research be concerned with ego adaptiveness and its relationship to improving reading.

Fauls (1960) recognized that a relationship might exist between the ability to profit from training in reading and certain ego organizations. Using female college students, he found that obsessive compulsives profited more from training (i.e., were more adaptive) than hysterics.

The relationship between silent and oral reading is important in light of the studies mentioned above which dealt with silent reading. McCord and Le Count (1951) compared groups of good and poor silent readers in relation to their oral reading ability. The criterion for good oral reading was "general effectiveness in communication" as rated by seven judges. Good interjudge reliability was present and the differences between the two groups was significant at the 0.01 level of confidence (Student's $\underline{t}$). Taking the previously cited studies in perspective, it would not seem unreasonable to posit that the same emotional factors which influence poor silent reading might also be responsible for poorer oral reading.

This position is further supported by the research of Shepherd and Scheidel (1956) who evaluated oral reading in relation to certain personal traits. Using students and professionally qualified speech teachers as judges, oral reading was rated in terms of "general effectiveness." Because interjudge reliability was not reported, the significance of the criterion was weakened. Nevertheless, when the "good" oral readers were compared with the average population and a sample of poor oral readers, significant differences were found in their performance on the Edwards Personal Preference Schedule and the Allport-Vernon-Lindzey Study of Values. They summarized the differences in scales by describing the effective oral reader as having a

> . . . markedly individualistic attitude toward aesthetic, social and practical aspects of life. These subjects are inclined to the aesthetic, are strongly motivated and tend to be relatively self centered and ego involved (1956, 304).

It is important to note that this description of the effective oral reader is contrasted with the previously cited descriptions of the poor silent reader who lacked ego strength and self assertiveness.

A more recent study by Walters and Doan (1962) evaluated the perceptual, cognitive, and emotional processes in retarded reading. And they hypothesized that providing an incentive would effect reading improvement. They stated that

> The hypothesis concerning the provision of an incentive assumes both that reading retardation is a symptom of a generalized perceptual cognitive lag and that emotional (or motivational) factors are involved in reading retardation (1962, 355).

The results of their study revealed that incentives affected performance in an unclear way. And while this challenges the efficacy of their assumption, the preponderence of studies are in support of the assumption that emotions affect the reading process.

To summarize, it seems clear that emotional factors can influence both silent and oral reading; the more stable, assertive, motivated, and ego involved subjects being better readers. And it is also possible that cognitive processes which are mediating in the reading process are influenced or retarded in poor readers. Unfortunately, there are no studies which have examined the reading process in light of the influence of emotions evoked contiguously to the oral reading task. But there is reason for it to be tried, to determine whether it would be sensitive to the subtle influences which emotions may have on cognitive behavior.

Coding

Studies concerned with coding have usually been performed in relation to the emotions of threat and anxiety.

Coombs and Taylor (1952) reported a study which revealed that performance on a simple coding task was impaired when the coding was oriented around threatening stimuli. The criteria were time required to complete the task (in seconds) and number of errors in coding. While it might be expected that the mean time and errors would increase under conditions of threat, it is interesting to note that the variability (sds) of both of these criteria also increased as a function of threat.

Similar findings have been reported by Sarason, Mandler and Craighill (1952) and Mandler and Sarason (1952). The coding task was a modification of the Wechsler-Bellevue Digit Symbol Test. The former study revealed that college students who had a high degree of test anxiety performed more poorly on the coding task when they were told that the test was designed to measure their capability to achieve in college.

The latter study proposes that the reason for malfunction under stress is due to the fact that responses to anxiety may or may not be relevant to the task confronting the individual.[1] If they are not relevant, then the number of errors in coding and the time required to perform the task would increase because of the non-adaptive nature of the responses to the anxiety. However, if the task is seen as relevant to anxiety reduction, then the efficiency and effectiveness of performance would be expected to improve (lower means and sds on errors and speed).

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[1] The relationship of this theory to the rationale for this study has been reviewed in relation to Longnecker's study (p. 27).

A more recent study reported by Irwin Sarason (1959) reviewed the literature and pointed to the considerable evidence which has been presented to support the position that anxiety causes different response patterns. Utilizing the same rationale as presented above, Sarason studied the effect of differential anxiety levels (as measured by the Taylor Manifest Anxiety Scale) and instructions on the ability to reproduce word associations.

The results of his study showed that the combination of high manifest anxiety and ego involving instructions resulted in significantly higher mean errors in reproduction. In addition, the variability was again higher. The differences were significant at the 0.01 level.

Katchmar, Ross, and Andrews (1958) reported a study conducted by Katchmar (1955) which dealt with anxiety and coding. The purpose of this study was to evaluate flexibility which was seen as the ability to shift performance in relation to the changing demands of the environment.

Anxiety was defined as a phenomenon which would either sensitize the individual and facilitate efficiency or debilitate functioning if it became too strong.

Using geometric figures and matched numbers, which were periodically altered, the average time to complete the coding sequences was calculated in addition to the number of errors. The independent variables were manifest anxiety and involvement. It was found that manifest anxiety did not relate to performance until stress (ego involving instructions) was introduced; at which time efficiency of performance and flexibility of response were significantly impaired.

And a study by Gladfelter (1958) is of special interest because it evaluated the effects of emotional facilitation on cognitive behavior. Using hypnosis, Gladfelter induced post hypnotic states of anger, fear, and interest; and studied performance on a variety of cognitive tasks.

Relevant to this study is the "psychomotor task" which was letter counting for a five minute period; which resembles in some respects the coding activity. Gladfelter found that anger and fear increased psychomotor speed while interest decreased speed significantly. Likewise, errors in the psychomotor task decreased with interest and increased with anger and fear.

In sum, a review of the literature has shown that the cognitive task of coding is sensitive to the emotional reactions of subjects; whether it be anxiety, fear, anger or interest.

General summary

Studies of the SC have found that either client-actors or taped client comments of specific types will result in differential counselor responses regardless of whether they are verbal or non-verbal. The major finding is that hostile client comments seem to evoke hostility and/or manifestations of anxiety in return while anxious or friendly client comments seem to evoke non-anxious responses.

Regarding the dependent variables, the greatest amount of research has been done using tachistoscopic techniques. Research has confirmed that emotions--especially anxiety--affect the ability to perceive words, numbers, or figures presented tachistoscopically. And closure threshold, which has been tested by a variety of techniques, has also been shown to affect emotional reactions.

Oral reading has been shown to be affected by the emotional reactions of subjects too. But the majority of studies have not used this cognitive task as a dependent variable indicator of the presence of emotional reactions.

Research concerned with coding has also been shown to be responsive to the emotional reactions of the subjects.

Most of it has been focused on the effects of threat but research has shown that performance can be influenced by other emotional reactions as well.

CHAPTER III: PROCEDURES

This chapter will be concerned with the description of the sample, the development of the independent and dependent variables, and controls relevant to the conduct of the experiment. In addition, the hypotheses and the statistical treatment of the data will be described.

Sample

Selection

Because the purpose of this study was to evaluate the effect of tape listening on SCs, only those who were matriculated degree candidates and were enrolled in a Counseling Practicum at the School of Education at Boston University during the Fall of 1965 were invited to participate. This means that the subjects were all actively involved in recording and evaluating their behavior as counselors.

The task of tape listening did not ask for an active response from the SC which would involve him in the listening process automatically. However, involvement was essential and the experimenter attempted to achieve this through meeting with six practica and explaining that the study was designed to measure "some qualities of effective counseling." In order to minimize the personal threat, assurance was given that psychodynamic functioning (in traditional terms) was not the focus of the study and that the concern was not for individual but group behavior. Anonymity was also assured.

In general, the investigator responded to what seemed to be inordinate anxiety when it was presented, but avoided reducing the threat level to the extent that the SC would not be involved.

Participation in the study was a student decision, although some pressure was exerted through faculty support of the project. Since several students declined to participate, the sample represents those students who were available, interested in the project, and who were not extensively threatened by it.

It is noteworthy that no students withdrew after committing themselves to participate. And it is of greater significance when viewed in the context of the expectations on them. The experiment required that they participate for one hour in each of the three weeks between Thanksgiving and the Christmas recess: usually the most active and academically demanding period during the semester. The fact that one hundred per cent participation did exist can also be construed as a further indication of the SCs' committment and involvement in the study.

Description

All students who volunteered for the study were asked to fill out a simple information form which provided data necessary to describe the sample. This form is included in Appendix A.

Table I summarizes the source, sex, and number of students from each of three levels of practica. An inspection of this table reveals that the majority of students were enrolled in the Introductory Practicum. The differences in these three practica are described below.

TABLE I

SOURCE OF SUBJECTS BY PRACTICUM TYPE AND SEX

Source	Number participating Male	 Female	 Total
Introductory Practicum	5	16	21
Intermediate Practicum	5	4	9
NDEA Institute Practicum	5	2	7
Total	15	22	37

The Introductory Practicum is where students usually encounter their first recording and listening experiences. It would be logical to conclude that these students would be less experienced both academically and practically than the other two groups represented.

The Intermediate Practicum is composed of students who have successfully completed the Introductory Practicum and who are more skilled in counseling techniques. As a group, they have already used the tape recorder in their training.

The third group composed of NDEA Guidance Institute students is more difficult to classify as some have had previous experience while others are involved in their first Practicum and, consequently, their first experience with the tape recorder as a part of their training. They also differ from the previously mentioned groups in that they have field placements in the local public schools two days per week which provide more counselor-counselee contact than either of the other practica. But these contacts are often of less depth than that which the counselors in the Intermediate Practicum encounter with their clients.

These differences provide a rather heterogeneous group of students who are all involved in the process of recording their contacts with clients and listening to them as well as listening to each other's counseling sessions. It further indicates that all of them, to varying degrees, are involved in the process of evaluating themselves both personally and professionally.

Table II presents other descriptive data and further illustrates the heterogeneity of the sample.

TABLE II

BASIC DESCRIPTIVE STATISTICS CONCERNED WITH THE COMPOSITION OF THE SAMPLE

	Statistic			
Characteristic	Mean	Median	Standard Deviation	Range
Age	31.32	30	8.222	21 to 49
Number of hours in Counselor Ed	29.22	24	5.805	00 to 60
Number of years experience in Ed	4.76	3	5.968	00 to 30
Number of years experience in Counseling*	1.32	0	2.819	00 to 13

*Twelve subjects reported at least one year of experience as a counselor.

An inspection of Table II reveals that there is considerable variation in age, experience, and academic level. Skewness is common to all of the characteristics. An examination of the variability of age indicates that the range of age is considerably greater than the corresponding standard deviation, which encompasses most of the SCs who are below the mean age. And it will be noted that a fraction more than two standard deviations above the mean are required to encompass the oldest individual in the group. This situation is also revealed by comparing the mean and median number of hours in Counselor Education. In this case, a few Advanced Doctoral Candidates who have accumulated many hours in Counselor Education are responsible for the higher mean.

The number of years experience in education and the number of years experience in counseling also reveal a skewness which is represented by the standard deviations being greater than the means. This is due to the fact that most of the students in the Introductory Practicum have little or no vocational background.

A general conclusion from this data would be that the group is a rather heterogenous sample of students whose background, age, and experience vary considerably. There are a few SCs who are quite experienced, but the majority tend to represent a rather young, inexperienced sample of counselors in training.

The characteristics of this sample are viewed as contributing significantly to the study because the results will represent the performance of a broad cross section of students in counselor education. Any results and conclusions should be viewed in light of the composition of the group which represents a broad cross section of ages, levels of training, and professional educational experiences.

Independent Variables

The independent variables were six tape recorded client comments of about five minutes in length--one client for each tape. The length of the tapes was selected because it was long enough to clearly convey the feeling tone and short enough so as not to bore the subject.

Three kinds of client responses to the counselor were present in the six tapes: positive and supportive of the counselor and his role; negative and hostile towards the counselor and his role; and neutral towards the counselor, meaning that heither positive nor negative feelings were expressed concerning the counselor and his role. There were two tapes of each type, one with a male client and the other with a female client. No counselor voice was recorded in any tape. All tapes were role played by professional counselors who were coached to act with a certain attitude towards the counselor. Originally, these tapes were approximately eight to ten minutes in length, but they were reduced to approximately five minutes in length because it was apparent that the impact of the client comment was lost due to listener fatigue and role player fatigue. This was accomplished by editing the tapes, eliminating superfluous comments which did not seem to contribute significantly to either the desired tone of the interview or to the authenticity of the tape.

A total of twelve tapes were developed and given to four judges who were all professional counselor educators at the Boston University School of Education. Each judge was given a rating sheet which contained the three above named categories and a fourth category called "unclassifiable." The fourth category was felt to be particularly important because it allowed the judge to construe the excerpt as he wished, rather than as defined by the investigator during the role playing. A copy of the rating sheet may be found in Appendix B.

A pre-established criterion required that at least three out of the four judges be in agreement as to the type of interview presented. Initially, six excerpts were presented to the judges and the criterion achieved on five of the six.

Another six excerpts were then presented to the judges and consensus was achieved. An inspection of Table III reveals that the excerpt which was most difficult to achieve consensus on was neutral in affect. Both the positive and negative affect tapes achieved one hundred per cent consensus easily, but it required six excerpts to achieve consensus on the neutral tape. And only one of these achieved one hundred per cent consensus.

TABLE III

RESULTS OF JUDGING OF TWELVE TAPE EXCERPTS BY FOUR COUNSELOR EDUCATORS

Judge	Excerpt 1	2	3	4	5	6	7	8	9	10	11	12
I	C	B	A	A	C	B	B	B	B	B	B	B
II	C	D	A	A	C	A	A	D	B	D	B	D
III	C	D	A	A	C	B	B	D	B	B	D	D
IV	C	B	A	A	C	B	A	B	B	B	B	B
Per cent agreement	100	50	100	100	100	75	50	50	100	75	75	50
Accepted excerpts	x		x	x	x	x			x			

Note: A = Supportive and Positive; B = Neutral; C = Negative and Hostile; D = Unclassifiable.

The reason for the difficulty in achieving consensus on the neutral tape is not clear. One possible explanation lies in the structuring of the role which the investigator did while coaching the role player. The role required that neither positive nor negative affect be expressed to the counselor either explicitly or implicitly. The requirement for control of implicit indications of positive or negative feeling constricted the role players to the extent that many of the roles they played were immediately rejected by the investigator because they lacked so much affect that they were not authentic.

A second reason for this problem may be due to the similarity of the definitions of the "B" and "D" categories. Inspection reveals that these categories were used most frequently where there was the greatest lack of agreement.

Once the six excerpts had been selected, they were transferred to six smaller tape reels with two tapes of the same affect on each reel. The order of presentation was reversed so that the male excerpt both preceded and succeeded the female tape of the same affect.

The scripts of the six tape excerpts may be found in Appendix C.

Dependent Variables

After listening to one of the tapes previously described, the SC was asked to perform five different tasks which yielded seven measures of cognitive performance. Two of these measures involved the use of a tachistoprojector with which twenty words and eleven numbers were projected on a screen for 0.01 seconds each. Approximately eight seconds separated exposures and subjects were expected to write down what they saw during this interval. The criteria were the number of errors made in correctly identifying the word or number exposed. The third task also measured rapid perception and involved the establishment of a closure threshold through the presentation of figures for 0.10 seconds with varying degrees of perimeter represented.

The fourth task required the SCs to read orally into a tape recorder. This task contributed two measures of cognitive performance: reading rate and error rate.

The fifth task was coding. This yielded measures of errors in coding and number completed within a two minute time period.

The SCs performed all of these tasks twice in each of the three weeks. They listened to two tapes of the same affect type each week, performing all tasks subsequent to the tape listening experiences.

The development of the tasks will be described in detail in the following pages.

Tachistoprojector tasks

Word perception. Six lists of twenty words each were developed by drawing on the word association lists of Smith (1921), Rapaport (1946), and Appelbaum (1958) and supplementing them with other words from the Thorndike-Lorge list of thirty thousand words (1944).

Studies which have focused on determining perceptual thresholds have often indicated the desirability of controlling word length and frequency (Brown, 1961, 15-16). For this reason, it was desirable to exercise the same controls in this study.

An examination of Table IV reveals that the number of letters within each word list is very similar, the largest difference between the lists being only four letters. The second control, word frequency, was exercised in order to maintain a relative similarity in the frequency with which the words in each list occur in normal reading. The applicability of this control is somewhat limited by the age of the Thorndike-Lorge study which is a sampling of words taken from books during the 1930's.

A second limitation related to these controls is also important to note. The use of these two criteria has been primarily in the determination of perceptual thresholds--the point at which the projected word can be seen by the subject. Whereas the criteria for this study is the number of errors made in perceiving words which are presented only once, at full illumination, and with a constant exposure time of 0.01 seconds. Other studies of perceptual threshold have systematically varied these variables (Brown, 1961, 13-16).

TABLE IV

SUMMARY OF TWO CHARACTERISTICS OF WORD LISTS USED IN THE RAPID PERCEPTION TEST*

Test**	Total number of letters	Number of words occurring less than 29 times/ million
Green	109	5
Brown	107	5
Red	108	7
Yellow	109	7
Orange	109	7
Black	111	7

*The words used in this study may be found in Appendix D.

**Colors denote the different word lists used in the study.

Number Perception. The number perception task involved the presentation of eleven number combinations ranging from two to six digits in length. The use of numbers offers the advantage of being neutral and meaningless, retaining none of the affective loading present in words. Wylie (1957) has reported the use of this technique in a study which was designed to assess the impact of anxiety on the perception of numbers which had been artificially loaded with anxious connotations.

The procedure for the selection and organization of the items for this phase of the experiment was simple. Each of the six lists was developed by selecting numbers from a Table of Random Numbers and organizing them randomly within the lists (Edwards, 1960, 332-336). In order to familiarize the SCs to the number perception task, the first two items in the list were always two and three digits respectively. Table V indicates the frequency of occurrence of numbers of different length.

TABLE V

FREQUENCY OF OCCURRENCE OF NUMBERS OF VARIOUS LENGTHS FOR THE NUMBER PERCEPTION TASKS*

Number of digits in number	Frequency of occurrence
2	1
3	2
4	2
5	3
6	3
Total	11

*The six lists of numbers used in this study may be found in Appendix E.

Scoring was accomplished by allowing one point for each digit seen correctly and a point for perceiving the group of numbers without a reversal. For example, if the presented number was 734 and the SC saw 743 he would only receive three points instead of the maximum which would be four.

Closure threshold. The procedures and techniques used in the development of this task were adopted primarily from the work of Bobbitt (1958). His study involved the determination of closure thresholds for different kinds of triangular figures which contained an equal area within the figure. By presenting a series of isoscelese and equilateral triangles which were drawn with proportional segments of the base and vertex missing, Bobbitt was able to determine that the shape of the triangle altered the closure threshold.

In order to control for the effects of shape this study used only an equilateral triangle. Other major alterations in procedure were as follows:

1. The presentation of figures was with a slide projector as cost prohibited the use of the more complex and sophisticated constant field illumination equipment used by Bobbitt.

2. The slides were presented in 2-1/2 per cent intervals instead of 5 per cent intervals.

3. The starting point for an ascending presentation order is believed to be higher than Bobbitt's although it is difficult to determine the exact point (percentage perimeter)

at which his presentations began. A pilot study justified the selection of 35 per cent perimeter for this study.

Appendix F provides a sample drawing of two figures and a table of the dimensions of all the figures.

The threshold of closure was established by using a scheme similar to that employed by Bobbitt. Subjects were told that they were to be shown a series of figures; some of which looked like two opposing angles while others looked like a complete figure. Then they were shown the whole set of figures and told that during the experiment they were to start by checking the column appropriate to whether they saw twoness (two opposing angles) or oneness (a whole figure).

The group of figures was alternately presented in ascending and descending orders so the subjects were told that they would sometimes start with a relatively complete figure and other times with a relatively incomplete figure. They were instructed to check the column (oneness or twoness) on the answer sheet until they saw the figure as having the opposite quality. Then, they would check the other column once and the test would terminate.

Scoring for the closure threshold was accomplished by noting the point on the answer sheet where the subject changed columns and then assigning the appropriate perimeter value represented in that series of slides.

Development and Presentation of Slides. The general technique for the presentation of the items involved use of a standard 35 mm slide projector. The projector selected was a Kodak Carousel Model #800. Mounted on a stand in front of the lens was a Lafaytette Speedioscope which is a Speed Graphic shutter with variable speed control of high reliability. Two exposure times were employed: 0.01 seconds for word and number exposures, and 0.10 seconds for closure figure exposures. The time between exposures was approximately 8 to 10 seconds and was controlled by the automatic slide changing mechanism on the projector.

All slides for the three tests were developed by similar procedure. One word or one number 0.20 inches high was typed onto the center of a standard sized sheet of typing paper. Photographs were then taken with a Practina Single Lens Reflex with a bellows attachment and a 55 mm lens. The distance from lens to paper was approximately twenty-four inches. Standard Kodachrome II 35 mm color reversal film was used and this required a shutter speed of 0.20 seconds with an opening of f 4.

Examination of the word and number slides revealed that the projected image size did not conform to the accepted standard ratio of 1/25 for letter size to full projected height of the slide (Kodak, 1962). Consequently, it was necessary to mask all the slides in order to reduce the ratio to accepted standards of projection. This was accomplished by using Kodak Binding Tape and regular Scotch Tape to reinforce the adherence of the binding tape to the slide. The result of this modification was to increase the ratio to 0.78; well within the minimum standard.

While it was not necessary to do so, the figures were also masked vertically. This was done to reduce the superfluous projected area of the slides. A second reason was to control for the confusion which might have been present due to tape marks on the screen used to designate the prescribed area within which word and number slides would appear.

Oral reading

Selection. The reading passages were selected from Steinbeck's Travels with Charlie (1961) and were chosen at random. This book was selected because it was a relatively popular book and probably familiar to graduate students.

Selections were made in a random fashion with two criteria for evaluating the page designated by the Table of Random Numbers (Edwards, 1960, 322-336). Conversational passages were retained as opposed to descriptive or expository material, because conversational reading requires more instantaneous shifts in subject, thematic content, and expressed ideas; it also involves a greater mental shift in focus and concentration. Under different emotional conditions, this capacity to shift or concentrate might vary.

The second condition imposed on the selection of readings involved their contiguity. Passages which appeared to follow each other in sequence were avoided as they might have been perceived as having special meaning as a larger unit. One passage originally selected, was eliminated because of its proximity to a second selection.

In selecting the passages, care was taken to maintain relative similarity in length. Table VI contains information on the length of each passage and reveals that the largest difference in length is only fifty-five words. While this may seem like a rather large difference, the research of Gibbons, Winchester, and Krebbs (1958, 593) revealed that length of passage did not effect differences in oral reading rate.

The variables. Two dependent variables were extracted from the Oral Reading Task. Reading speed was recorded with a stop watch to the nearest full second. This number was then divided into the total number of words in the selection to provide an estimate of oral reading rate in terms of words per second.

The second variable was the number of errors made while reading. The criteria of an error were defined as

TABLE VI

LENGTH AND SOURCE OF ORAL READING PASSAGES*

Test	Number of words	Page**
Green	325	197-198
Brown	274	224-225
Red	305	100
Yellow	269	118
Orange	280	129
Black	293	135

*Copies of the passages used in this study may be found in Appendix G.

**Steinbeck (1961).

follows: any insertion, omission, correction, repetition, "ahs," stuttering, tongue slips, incoherent sounds, or any other sound which varied from the text. These criteria are similar to those used by Gray (1963, 19) and Gilmore (1952, 8-9) in their tests or oral reading skills. And it should be noted that these criteria are also similar to those used by Dibner (1956) in his efforts to measure transient anxiety in an interview.[1]

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[1] A more recent study by Boomer and Goodrich (1961) attempted to replicate the findings of Dibner using blind judges. Their findings were less clear cut and revealed that Dibner's personal bias may have contributed to his

The nature of these variables made it possible for their collection at the time of testing. In order to control for differences in the quality of the printed page they were to read, the same sheet of paper was given to each SC to read. Errors and time were recorded in their booklet on a separate copy of the same page they were reading.

The scoring of the readings was replicated by a second trained scorer who listened to the recording of the oral reading and rechecked the original timing and error count for the passage. The second scoring was done with no prior knowledge of what tape the SC has been listening to prior to that reading.

It should be noted that it was occasionally necessary to test two subjects at the same time. When this situation occurred, one subject was designated to read first while the other left the room. The order was then reversed so that the subject who read first after the first tape listening, read second after the second tape listening. This represents an attempt to control for prior knowledge of the text and for the order in which the data were collected.

Copies of the readings may be found in Appendix G.

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findings that anxiety in the interview influenced inaccurate verbalizations. The reference to this article is made with the recognition that the results must be qualified. The relationship in terms of criteria, however, seems important to this study.

Number coding

The Number Code Task was designed to simulate the coding tasks reported by Sarason (see page 36). Fifteen symbols and numbers were used and a two minute time limit was allowed for the task; less time than was necessary for its completion.

The symbols were designed so that groups of them had common characteristics, such as open angles, parallel lines, and circular symbols. The design incorporated similar symbols intentionally so that a high degree of sensitivity would be required to distinguish the appropriate symbol-number relationship. Appendix H contains copies of the six digit symbol tasks which were used.

For each of the six forms, a Table of Random Numbers (Edwards, 1960, 332-336) was used to establish the order of occurrence of the numbers to be coded. In addition, the symbols (which were the same for all tests) were assigned to numbers in the key in a random fashion for three pairs of the tasks. The tasks were presented to the students in a way that prevented the students from doing two coding tasks in the same week which had the same key.

The variables. The two criteria of performance on this task were the number correctly coded and the number of errors made in coding. The latter variable defined an error as any gross misrepresentation of the symbol which made it quite obvious that the SC had misperceived or misinterpreted the symbol (i.e., an open circle as closed, parallel horizontal lines as vertical).

Reliability

The mean reliability coefficients for the seven dependent variables are presented in Table VII. These coefficients were computed from the fifteen possible intercorrelations[1] of each variables by using Fisher's z' transformation (Edwards, 1960, 79-81, 363).

An inspection of Table VII reveals that all of the reliability coefficients are significantly different from zero.

It should be noted, however, that these coefficients represent a comparison of each SC's performance subsequent to listening to each of six different tapes. While this accounts in part for the lower than desirable level of relationship, it also accents the fact that the cognitive behavior elicited by the tasks functions reliably even under varying conditions.

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[1] The original intercorrelations were Pearson Product-Moment Correlation Coefficients.

TABLE VII

MEAN RELIABILITY COEFFICIENTS OF THE SEVEN DEPENDENT VARIABLES

Dependent variables	Mean reliability coefficients	Level of significance*
Errors in word perception	0.432	0.01
Number perception	0.565	0.01
Closure threshold	0.626	0.01
Reading speed (orally)	0.689	0.01
Errors in reading	0.394	0.02
Number coded correctly	0.667	0.01
Errors in coding	0.485	0.01

*$P_{0.01} \geq r = 0.418$ for 35 df.

$P_{0.02} \geq .381$.

Other Controls

Order effects

The nature of the independent variables necessitated that the order of presentation be rotated to control for any order effects which might be created. Accordingly, subjects were randomly assigned to three subgroups which listened to the tapes in different orders during the three weeks of the experiment (see Table VIII).

TABLE VIII

ORDER OF PRESENTATION OF THE INDEPENDENT AND DEPENDENT VARIABLES INCLUDING THE ASSIGNMENT OF SPECIFIC TEST FORMS TO THREE SUBGROUPS

	Week and tape affect					
Subgroup	Week 1		Week 2		Week 3	
I	+		0		-	
	male	female	female	male	female	male
	Green	Brown	Yellow	Black	Orange	Red
	X_{123}	Y	Z	Y	Z	X_{312}
	Y	Z	X_{231}	X_{132}	Y	Z
	Z	X_{321}	Y	Z	X_{213}	Y
II	0		-		+	
	female	male	male	female	female	male
	Red	Orange	Brown	Green	Yellow	Black
	(Order of dependent variables same as above.)					
III	-		+		0	
	male	female	female	male	male	female
	Black	Yellow	Orange	Red	Brown	Green
	(Order of dependent variables same as above.)					

Note: X = Tachistoprojector Tasks
1 = Word Perception
2 = Number Perception
3 = Closure Threshold
Y = Oral Reading Tasks
Z = Number Coding Tasks

The colors denote the specific test that was used.

In addition, it will be noted that the order of presentation of the dependent variables was rotated so that each task preceded and succeeded every other task. Table VIII also shows that each of the six forms, designated by colors, was administered for each of the tape conditions. This procedure controls for any bias which might have been present in a specific form of the tasks.

Table IX details the procedures used in the presentation of the Closure Threshold Test. The starting points for presentation of the figures were modified in order to prevent subjects from learning to respond at a specific point in the series where they had responded on a previous trial.

TABLE IX

SCHEDULE OF PRESENTATION OF FIGURES FOR THE CLOSURE THRESHOLD TASK

	Week					
	First		Second		Third	
	1	2	3	4	5	6
Starting point (in percent perimeter)	40%	90%	87-1/2%	42-1/2%	35%	90%
Direction	Ascend	Descend	Descend	Ascend	Ascend	Descend

Scoring. All tasks were scored twice by two individuals who had been trained by the Experimenter. Scoring was done in a blind fashion with the scorer not knowing which tape condition had preceded the collection of that set of dependent variables.

Instructions

In the first week of the experiment, it was found that about twenty minutes were devoted to the instructions (because the whole experience was new to the participants). All instructions were written and standardized, but questions were answered in an informal manner when repetition of the instructions seemed inappropriate.

The second and third weeks presented much less difficulty. It was found that only a statement that they were participating in a study that was "attempting to measure some qualities of effective counseling" and that they were to listen to the tape "as if they were the counselor to whom the counselee was speaking" was necessary. In addition, they were told that they would be doing the same kinds of tasks as in the previous week(s). Then, the order of tasks was outlined. (A copy of the instructions is included in Appendix I.)

The testing facility

During the three weeks of the experiment, all data collection was performed in the same room. This room was ideally suited for the study as it was a motion picture preview room.[1] It was windowless and had a constantly variable light source which was adjusted to the individual needs of each SC.

The dimensions of the room were slightly over nine feet long and six feet wide. Subjects sat at desks located approximately thirty inches from the screen which was mounted on one wall. The only things present on the desks were test booklets (see Appendix J), an ash tray, and a microphone used in the oral reading task.

All other equipment was located on a table behind the subjects. This table was high enough to permit a projection onto the screen at a flat angle which reduced word distortion to a minimum. The distance from the screen to the lens was eighty inches. Two tape recorders were also present on this table: one for playing the stimulus tapes and the other for recording the oral readings. The Experimenter administered the whole experiment from a position behind the subjects.

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[1] The author is grateful for the assistance and cooperation of Dr. Gaylen Kelly in making this room available for the duration of the study.

Hypothesis To Be Tested

The specific purpose of this study is to ascertain whether listening to tapes of different affective tones elicits different performance characteristics on the cognitive tasks used in this study.

While seven hypotheses to evaluate treatment conditions could be stated, the seven dependent variables are represented in the following examples:[1]

1. No differences will be found in word perception or number perception as a function of listening to tapes which are positive, neutral, or negative in affective tone expressed towards the counselor.
2. No differences will be found in closure threshold as a function of listening to tapes which are positive, neutral, or negative in affective tone expressed towards the counselor.
3. No differences will be found in either speed of oral reading or the frequency of errors made as a function of listening to tapes which are positive, neutral, or negative in affective tone expressed towards the counselor.
4. No differences will be found in either the number of items coded correctly or the number of errors in coding as a function of listening to tapes which are positive, neutral, or negative in affective tone expressed towards the counselor.

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[1] The reader may note that five tasks were previously mentioned but four hypotheses are stated here. The first hypothesis combines two tasks for the sake of simplicity.

In addition, the seven dependent variables will be tested for male tapes only (+M vs 0M vs -M) and for female tapes only (+F vs 0F vs -F).

Another group of hypotheses will examine the performance of different kinds of subgroups; determined according to sex, median age, and experience characteristics. These variables were selected because of their influence on research results reported in Chapter II.

The group hypotheses will be stated in null form once for all seven of the dependent variables. It should also be understood that the tests will be performed for the general hypothesis and for the sub hypotheses concerned with male tapes only and female tapes only. The hypotheses applied to groups in the study are as follows:

1. No differences will be found in the performance of males and females in word perception subsequent to listening to tapes which are positive, neutral, and negative in affective tone expressed towards the counselor.

   (Repeated for male tapes only, female tapes only, and for the other six dependent variables.)

2. Students under thirty years of age will not differ from students over thirty years of age in relation to their ability to perceive words subsequent to listening to tapes which are positive, neutral, and negative in affective tone expressed towards the counselor.

   (Repeated for male tapes only, female tapes only, and for the other six dependent variables.)

3. Students with less than three years of experience in counseling and/or education will not differ from those with more experience in relation to their ability to perceive words subsequent to listening to tapes which are positive, neutral, and negative in affective tone expressed towards the counselor.

   (Repeated for male tapes only, female tapes only, and for the other six dependent variables.)

And a third group of hypotheses will examine the interaction of groups and treatments. These hypotheses will provide information concerning the impact of tape affect by subgroups. The null hypothesis presented below illustrates this type of evaluation:

Ho: Errors in word perception are not a joint function of tape affect and the sex (age, experience level) of the SC.

   (Repeated for male comments only, female comments only and for the other six dependent variables.)

Another series of hypotheses will be concerned with order effects. Three kinds of hypotheses will be tested: one in relation to treatment differences (differences in order of presentation [see Table VIII]); a second in relation to group differences (differences in performance of the three subgroups); and a third related to group by treatment interactions (subgroup by affective comment order). Samples of these hypotheses are listed below:

1. Errors in word perception are not related to the order of presentation of client comments of different affective tones.

   (Repeated for male comments only, female comments only, and for the other six dependent variables.)

2. Errors in word perception do not differ between the three subgroups.

   (Repeated for male comments only, female comments only, and for the other six dependent variables.)

3. Errors in word perception are not a joint function of the order of presentation of the comments and the subgroups.

   (Repeated for male comments only, female comments only, and for the other six dependent variables.)

Treatment of the Data

Statistic to be used

The design and hypotheses of this research lend themselves to an Analysis of Variance. The usefulness of this statistic has been pointed out by Edwards who stated that the F test for differences in means is only slightly influenced by heterogeneity of variance, quite insensitive to nonnormality, and robust in spite of inequities in variance when there are equal 'n's (1960, 132).

The use of this statistic will yield tests of the differences in treatment means (the taped client comments); group performance (age, sex, and experience criteria); and the interaction effects (group by treatment functions). The error term (the denominator in the F ratio) will be the subjects' mean square for the treatment differences and the residual mean square for the group differences and their interaction.

Special transformation

An inspection of the data to be presented in the following chapter revealed a high degree of negative skewness in three of the variables; errors in word perception, errors in oral reading, and errors in coding. Because the distributions represented that of a negative binomial, a transformation developed by Beall (1942) was used.

The formula for this transformation is:

$$x' = k^{-1/2} \sinh^{-1} (kx)^{1/2}$$

where,

$k = (s^2 - \bar{x}) (1/\bar{x}^2)$

sinh = inverse hyperbolic sine

and,

$\bar{x}$ = mean performance under each tape condition

s^2 = variance of performance under each tape condition (1942, 247-249)

Beall provides a table (1942, 250-251) for conversion of x to x′ for different values of k. All statistical tests associated with these variables will be performed on the transformed values of the original results.

Summary

This chapter has detailed the procedures used and the experimental design employed. The following procedures have been described in some detail.

1. The independent variables were developed and judged by four counselor educators to be either positive, neutral, or negative in terms of the affective tone expressed towards the counselor.

2. The development of the five tasks which yield seven dependent variables has also been described with relevant controls being employed to avoid inequities which might otherwise be present. The reliability of the seven variables has been shown to differ significantly from zero.

3. Both independent and dependent variables were rotated to control for the effects of presentation order on the results.

4. Hypotheses were stated and an analysis of variance technique was described which is compatible with the research design; providing a robust examination of the results.

5. A transformation to control for skewness on three of the dependent variables was also reported.

The following chapter will present the results of the data analysis.

CHAPTER IV: RESULTS

This chapter is divided into two parts. The first part concerns the evaluation of primary hypotheses of: (1) treatment differences (the impact of client comments of different affective qualities); (2) group differences (the performance of groups differentiated on age, sex, and experience variables); and (3) the interaction of group by affect of client comment. The second part will report tests of hypotheses concerned with order effects in relation to treatment differences, group differences, and their interaction.

The nature of the design of this study permits the evaluation of over two hundred forty hypotheses. Consequently, one general hypothesis will precede the presentation of each major table of results.

It is also obvious that means, standard deviations, detailed tables of analyses of variance, and other statistics cannot be reported in full. Data will be cited when necessary and any specific information desired by the reader is available from the researcher.

The format of all tables providing basic analyses will be similar and will summarize three analyses of variance for all seven dependent variables: one analysis for male client comments of different affective tones; one for female client comments; and a third which combines the sex of the comments and tests only for the impact of the client comment affect. Sub-analyses will be reported in tabular form when the major analyses necessitate it.

Tables in the first part will contain analyses by three sub-groups defined by sex, age, and experience levels. Regarding sex, there were fifteen males and twenty-two females in the group. The age groups were defined by separating the total group at the median age which was thirty. The younger group contains nineteen SCs under thirty years of age. The less experienced group is comprised of nineteen SCs who had worked less than three years in education and/or counseling.

Subsequent to each table will be a brief statement summarizing the results in relation to the acceptance or rejection of the null hypotheses and/or to the direction of the differences reported. Chapter V will discuss the results reported in this chapter.

Part I: Primary Results

Treatment differences

A null hypothesis representative of those examining treatment differences would be stated as follows:

> No differences will be found in performance on the dependent variables as a function of listening to tapes of client comments which are positive, neutral, or negative in affective tone expressed towards the counselor.
>
> (Repeated for male client comments only and for female client comments only.)

Table X summarizes the results of nine tests of the above hypotheses for the seven dependent variables. An inspection of this table reveals that null hypotheses related to the impact of female client comments of different affective tones were rejected when the criteria were word perception errors and number perception scores. All other null hypotheses were accepted.

In order to determine the location and direction of the treatment differences manifested by these two dependent variables, *t* tests for correlated means were performed (McNemar, 1962, 80-102). The results are summarized in Tables XI and XII.

An inspection of Table XI reveals that significantly more errors were made in word perception when SCs had listened to either the positive or negative female tapes than when they had listened to the neutral tapes.

Table XII reveals that significantly more numbers were seen correctly subsequently to listening to either the female neutral or female negative tape than to the positive tape.

TABLE X

ANALYSES OF VARIANCE OF THE EFFECT OF LISTENING TO CLIENT COMMENTS OF DIFFERENT AFFECTIVE TONES ON WORD PERCEPTION ERRORS, NUMBER PERCEPTION ERRORS, CLOSURE THRESHOLD, ORAL READING SPEED, ORAL READING ERRORS, NUMBER CODED CORRECTLY, AND THE NUMBER OF ERRORS IN CODING*

F Ratios

		Tachistoprojector			Oral Reading		Coding	
Voice Heard	Group**	Word Percep Errors	Number Percep Scores	Closure Threshold	Speed	Errors	Number Coded	Number Errors
Male:								
	Sex	0.375	2.365	0.745	0.124	0.680	1.685	0.441
	Age	0.370	2.363	0.733	0.117	0.676	1.709	0.453
	Exp	0.371	2.388	0.741	0.125	0.690	1.692	0.438
Female:								
	Sex	4.564⊛	5.496⊛⊛	0.973	0.449	1.424	0.235	2.652
	Age	4.540⊛	5.826⊛⊛	0.990	0.455	1.365	0.251	2.694
	Exp	4.626⊛	5.548⊛⊛	0.967	0.432	1.351	0.240	2.640
Both combined:								
	Sex	0.917	0.817	1.559	0.382	1.107	0.848	1.999
	Age	0.894	0.854	1.547	0.366	1.105	0.876	2.067
	Exp	0.894	0.837	1.517	0.365	1.089	0.857	1.966

*In the presentation of the remaining data, the seven variables will be referred to as a group rather than listing all seven each time.

**The small differences in the size of the F ratios within each cell are due to differences in the composition of the groups. This effects the size of the residual mean square which is the denominator in the F ratio for treatment differences.

⊛$p_{.05}$ = 3.13 for 2 and 70 df.

⊛⊛$p_{.01}$ = 4.92 for 2 and 70 df.

TABLE XI

MEANS, STANDARD DEVIATIONS, AND RESULTS OF *t* TESTS OF TREATMENT DIFFERENCES AS MEASURED BY PERFORMANCE ON THE WORD PERCEPTION TASK SUBSEQUENT TO LISTENING TO FEMALE CLIENT COMMENTS OF DIFFERENT AFFECTIVE TONES

Affective Quality	Errors in word Perception		Comparison	*t*
	Mean	S.D.		
Positive	0.821	0.544	+ vs 0	2.804**
Neutral	0.570	0.657	0 vs -	2.583**
Negative	0.821	0.569	- vs +	ns*

*By inspection.

**>$P_{.01}$ = 2.457 for 36 df (Edwards, 1960, 361).

TABLE XII

MEANS, STANDARD DEVIATIONS, AND RESULTS OF *t* TESTS OF TREATMENT DIFFERENCES AS MEASURED BY PERFORMANCE ON THE NUMBER PERCEPTION TASK SUBSEQUENT TO LISTENING TO FEMALE CLIENT COMMENTS OF DIFFERENT AFFECTIVE TONES

Affective Quality	Scores in Number Perception		Comparison	*t*
	Mean	S.D.		
Positive	43.595	8.277	+ vs 0	1.780*
Neutral	46.243	5.730	0 vs -	0.707
Negative	47.243	7.800	- vs +	2.204**

*$P_{.05}$ = 1.697 for 30 df.

**$P_{.01}$ = 2.027 for 36 df.

Group differences

A null hypothesis representative of those examining group differences would be stated as follows:

> No differences will be found in the performance of males and females on the dependent variables subsequent to listening to tapes of client comments which are positive, neutral, or negative in affective tone expressed towards the counselor.

This hypothesis is repeated for male client comments only, female comments only, and with age and experience factors as criteria of comparison as well.

An inspection of Table XIII quickly reveals that all null hypotheses related to SC sex were sustained. Apparently, sex of the SC has no relationship to performance on the seven dependent variables regardless of the sex of the client comment heard.

Reading horizontally, null hypotheses related to experience level were rejected for three of the seven variables when SCs listened to male client comments. An inspection of the results reveals the following differences in direction:

1. Less experienced SCs made significantly fewer errors in word perception than more experienced SCs subsequent to listening to the male client comments (0.05 confidence level).

2. Less experienced SCs made significantly more errors in oral reading than more experienced SCs subsequent to listening to male client comments (0.01 confidence level).

TABLE XIII

THREE ANALYSES OF VARIANCE OF THE PERFORMANCE OF SEX, AGE, AND EXPERIENCE SUBGROUP ON SEVEN DEPENDENT VARIABLES SUBSEQUENT TO LISTENING TO TAPED CLIENT COMMENTS

		F Ratios						
		Tachistoprojector			Oral Reading		Coding	
Voice Heard	Subgroup	Word Percep Errors	Number Percep Scores	Closure Threshold	Speed	Errors	Number Coded	Number Errors
Male:								
	Sex	2.245	1.472	0.016	3.933	0.052	0.189	0.001
	Age	0.393	0.011	1.288	0.195	4.986*	3.071	5.593*
	Exp	6.759*	2.107	0.072	0.727	4.196*	8.270**	3.515
Female:								
	Sex	1.023	0.834	0.282	0.853	0.377	1.026	0.058
	Age	0.460	0.176	0.972	0.783	8.444**	0.683	2.292
	Exp	0.983	1.226	0.568	0.128	0.267	14.677	0.550
Both combined:								
	Sex	0.045	1.180	0.112	3.170	0.227	0.574	0.023
	Age	0.002	0.035	1.260	0.444	8.340**	1.693	4.248*
	Exp	3.657	0.601	0.275	0.380	1.736	12.208**	1.847

$*P_{.05}$ = 4.13 for 1 and 34 df.

$**P_{.01}$ = 7.44 for 1 and 34 df.

3. Less experienced SCs coded significantly more items correctly than more experienced SCs subsequent to listening to male client comments (0.01 confidence level).

Null hypotheses relative to experience were also rejected for the other two analyses of the number coded variable. The patterns of these results were the same as mentioned above: the less experienced SCs coded significantly more items than their more experienced counterparts, regardless of the sex of the client comment.

Null hypotheses related to differences in age groups were also rejected in patterns. Significant differences in errors in oral reading and errors in coding were present subsequent to listening to male tapes and when the tapes were combined. The pattern was sustained only for oral reading errors under the female client conditions (although it is worth noting that the F ratio for errors in coding, which is not significant, is over four times as large as those for sex and experience groups).

The direction of these differences may be summarized as follows:

1. Younger SCs made significantly more errors in oral reading and significantly more errors in coding subsequent to listening to male client comments or to both male and female client comments combined.

2. Younger SCs made significantly more errors in oral reading subsequent to listening to female client comments.

Interaction of groups with treatments

Representative of interaction hypotheses is the following:

> Performance on the dependent variables is not a joint function of the affect of the client comment and the sex of the SC.

This hypothesis is repeated for male tapes only, female tapes only, and for the age and experience groups as well.

The results of the analyses of variance caused all null hypotheses to be accepted. And this clearly confirms that there are no interrelationships between tape affect and sex, age, or experience grouped SCs. The findings of these analyses are included in Appendix K.

Part II: Results Related to Order of Presentation

Group differences

In order to examine whether the three subgroups which listened to the tapes in different orders differed from each other, the following general null hypothesis was stated and tested:

> No differences exist in the performance of the three subgroups on the dependent variables subsequent to listening to client comments of different affective tones.

This hypothesis is repeated for male client comments only and for female client comments only.

Table XIV summarizes the results of analyses of these hypotheses. An examination of these findings reveals that all null hypotheses were accepted. The subsequent conclusion is that the subgroups did not differ from each other in terms of their performance on the seven dependent variables. The procedure of randomly assigning SCs to the three subgroups achieved its purpose: equalizing the composition of the groups which were to receive different treatment conditions.

Treatment differences

In addition to establishing whether the three subgroups differ from each other in performance on the tapes, it is important to ascertain whether three randomly formed subgroups will alter the analyses of variance focused on treatment differences. A representative example of the hypotheses tested would be stated as follows:

> No differences will be found in performance on the dependent variables as a function of listening to tapes of client comments which are positive, neutral, or negative in affective tone expressed towards the counselor.

Table XV summarizes the results of tests of these hypotheses and reveals that analyses which combined the results of performance on tapes of both sex were accepted for all seven dependent variables.

Analyses of the female client comments revealed again

TABLE XIV

THREE ANALYSES OF VARIANCE COMPARING THE PERFORMANCE OF THREE SUBGROUPS ON SEVEN DEPENDENT VARIABLES COLLECTED SUBSEQUENT TO LISTENING TO CLIENT COMMENTS OF DIFFERENT AFFECTIVE TONES

	F Ratios*						
	Tachistoprojector			Oral Reading		Coding	
Voice Heard	Word Percep Errors	Number Percep Scores	Closure Thresh-old	Speed	Errors	Number Coded	Number Errors
Male only	0.895	1.486	2.741	2.121	1.464	0.616	0.750
Female only	0.923	1.871	1.678	0.016	0.719	1.050	2.941
Both combined	0.932	1.840	1.921	0.413	0.955	0.695	1.856

*$F = 3.28 \geq P_{.05}$ for 2 and 34 df.

that the performance on the word perception and number perception and number perception task were significantly altered by the affective tone of the female tapes. These results further confirm the findings reported in Tables X, XI, and XII. Differences in the magnitude of the F ratios reported in the two tables are attributed to differences in the composition of the groups which were being analyzed simultaneously.

Table XV also reveals that differences in treatments were present in the analyses of performance on the number

TABLE XV

THREE ANALYSES OF VARIANCE OF THE EFFECT OF ORDER OF PRESENTATION OF CLIENT COMMENTS OF DIFFERENT AFFECTIVE TONES ON SEVEN DEPENDENT VARIABLES

	F Ratios						
	Tachistoprojector			Oral Reading		Coding	
Voice Heard	Word Percep Errors	Number Percep Scores	Closure Threshold	Speed	Errors	Number Coded	Number Errors
Male only	0.445	3.164*	0.855	0.143	0.736	5.352**	0.513
Female only	5.131**	7.856**	0.979	0.471	1.631	0.517	2.620
Both combined	1.170	1.275	1.571	0.421	1.491	2.498	2.061

*$P_{.05}$ = 3.14 for 2 and 65 df.

**$P_{.01}$ = 4.95 for 2 and 65 df.

perception task and the number coded variable.

Table XVI summarizes analyses of performance differences on the number perception task subsequent to listening to male client comments of different affective tones. The findings indicate that number perception was significantly better subsequent to listening to positive client comments than to listening to either negative or neutral comments.

TABLE XVI

MEANS, STANDARD DEVIATIONS, AND RESULTS OF t TESTS OF TREATMENT DIFFERENCES AS MEASURED BY PERFORMANCE ON THE NUMBER PERCEPTION TASK SUBSEQUENT TO LISTENING TO MALE CLIENT COMMENTS OF DIFFERENT AFFECTIVE QUALITIES

Affective Quality	Number Perception Scores		Comparison	t
	Mean	S.D.		
Positive	46.946	6.850	+ vs 0	1.777*
Neutral	44.595	5.838	+ vs -	1.523
Negative	45.622	6.381	0 vs -	1.091

$*P_{.05} = 1.697$ for 30 df.

Table XVII[1] reveals that performance on the coding task subsequent to listening to negative male client comments was significantly poorer than performance on the task subsequent to listening to either the positive or neutral client comments.

Group by treatment interactions

A third question related to the order of presentation is concerned with determining whether performance is a joint function of the order of presentation and the subgroup which experiences it. The null hypothesis to examine this relationship may be stated as follows:

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[1] The statistical analysis reported in Table XVII are analyses of variance. This statistic was used because an initial evaluation of the differences between means (Student's t) was not significant.

TABLE XVII

MEANS, STANDARD DEVIATIONS, AND RESULTS OF ANALYSES OF TREATMENT DIFFERENCES AS MEASURED BY PERFORMANCE ON THE NUMBER CODED VARIABLE SUBSEQUENT TO LISTENING TO MALE CLIENT COMMENTS OF DIFFERENT AFFECTIVE QUALITIES

Affective Quality	Number Coded Correctly Variable		Comparison	F Ratio
	Mean	S.D.		
Positive	60.811	10.158	+ vs 0	1.780
Neutral	62.432	14.308	+ vs -	4.297*
Negative	58.162	13.182	0 vs -	8.836**

*P$_{.05}$ = 4.13 for 1 and 34 df.

**P$_{.01}$ = 7.44 for 1 and 34 df.

> Performance on the dependent variables is not a joint function of the order of presentation of client comments of different affective tones and the subgroup which receives it.

This hypothesis is repeated for male client comments only and for female client comments only.

The results of tests of these hypotheses are included in Table XVIII. An examination of the findings reveals that most of the null hypotheses are rejected. This would suggest that there is some relationship between the subgroup and the order of presentation of the client comments. These findings will be discussed in greater detail in the following chapter.

As the combined tape analyses reflect two measures of

TABLE XVIII

THREE ANALYSES OF VARIANCE OF THE EFFECT OF THE INTERACTION OF THE ORDER OF PRESENTATION OF CLIENT COMMENTS OF DIFFERENT AFFECTIVE TONES BY SUBGROUPS ON SEVEN DEPENDENT VARIABLES

F Ratios

	Tachistoprojector			Oral Reading		Coding	
Voice Heard	Word Percep Errors	Number Percep Scores	Closure Threshold	Speed	Errors	Number Coded	Number Errors
Male only	4.215**	6.710**	3.447*	4.555**	2.095	38.809**	3.598*
Female only	2.895*	8.310**	5.570**	2.087	4.696**	12.183**	0.505
Both combined	5.911**	10.311**	3.051*	4.324**	6.965**	36.114**	1.475

*$>P_{.05} = 2.51$ for 4 and 65 df.

**$>P_{.005} = 4.15$ for 4 and 65 df.

the effect of listening to client comments of each affective quality, it is meaningful to illustrate the mean performance levels as a function of the order and type of affect presented. Figures 1 through 6 reveal the relationships for the significant interaction terms.

Figures 1 and 2 illustrate most conclusively the interaction of order of presentation and tape affect. An examination of Figure 1 (number coded correctly) reveals that

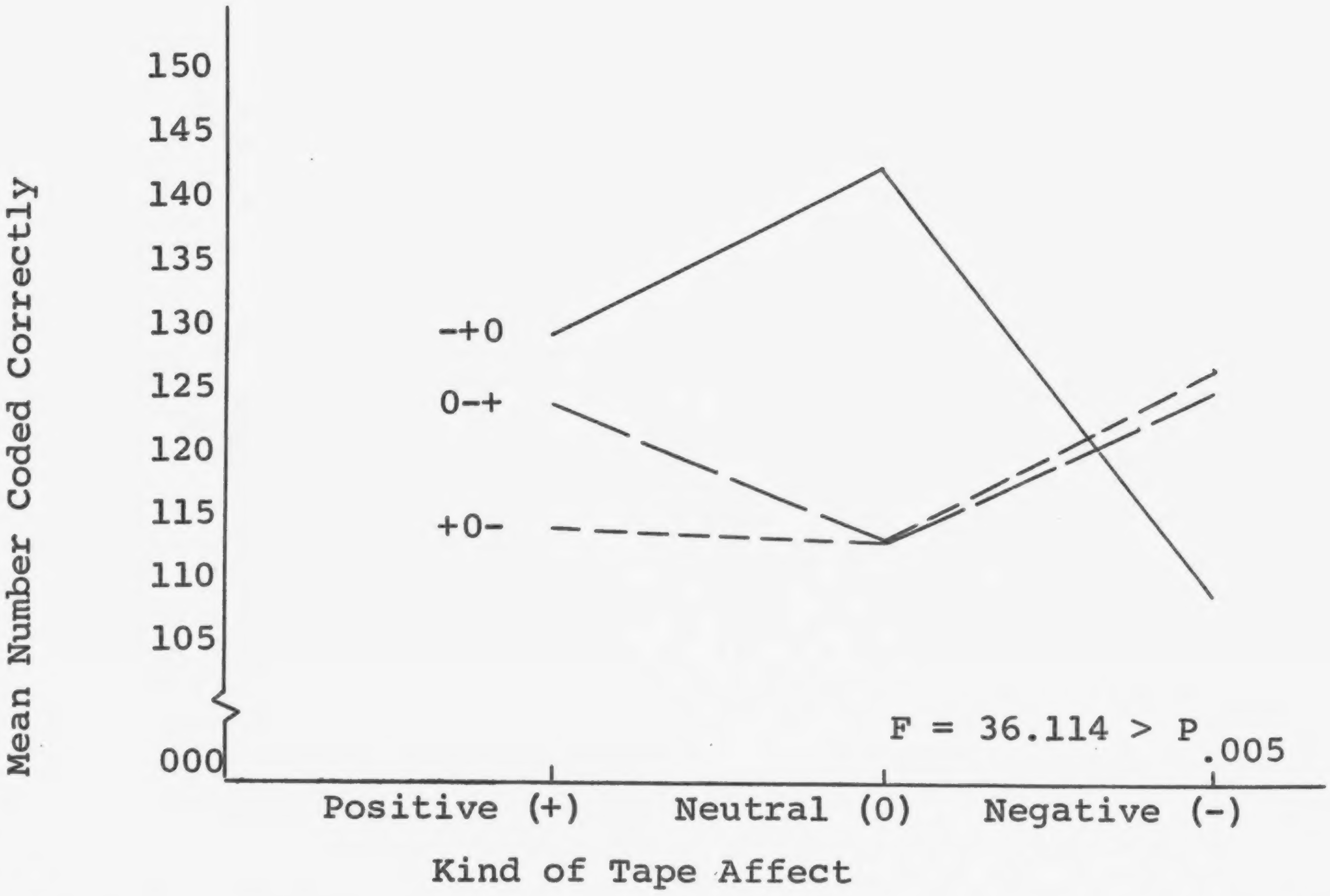

Figure 1. Number of Items Coded Correctly as a Function of Presentation Order and Kind of Affect

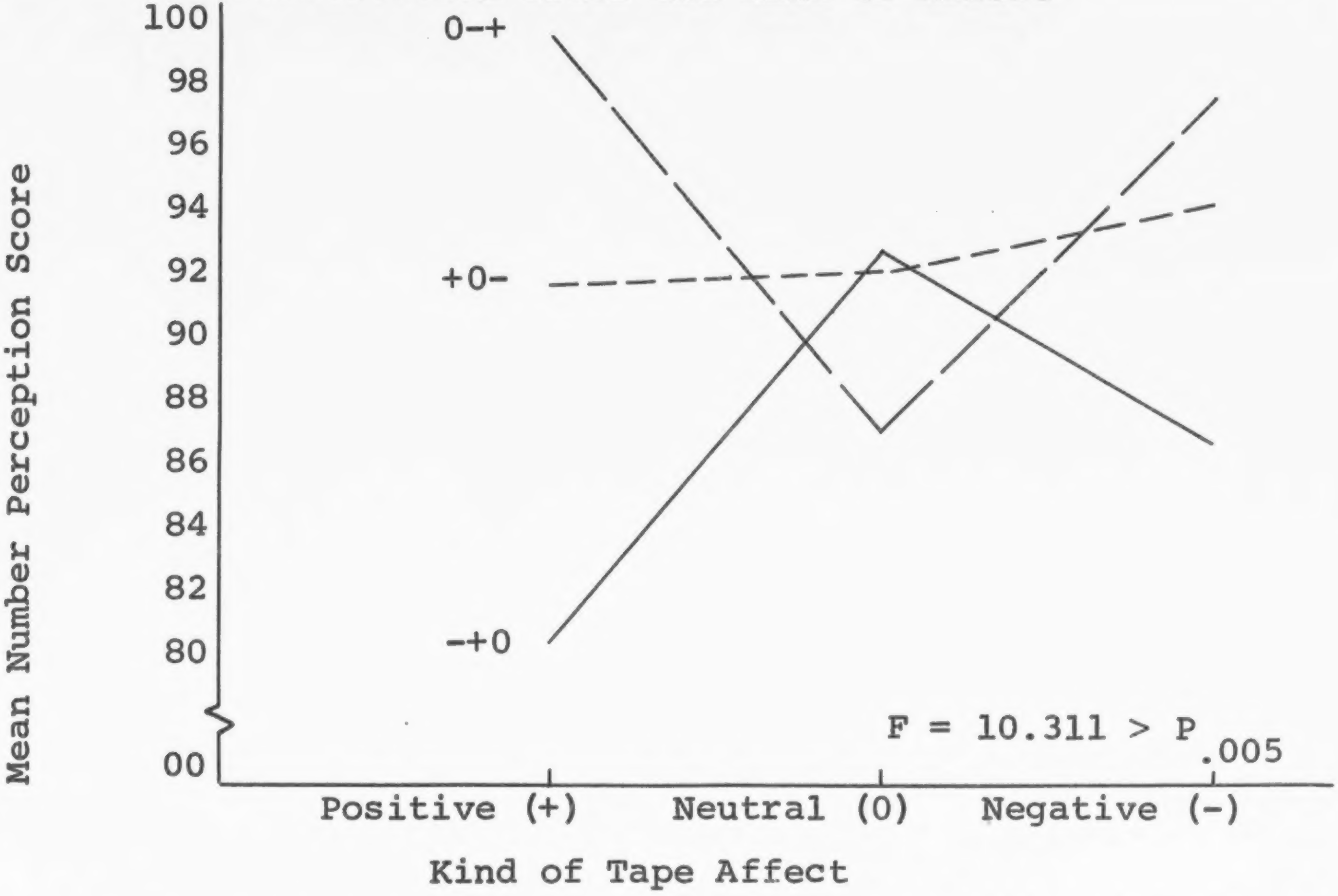

Figure 2. Number Perception Scores as a Function of Presentation Order and Kind of Affect

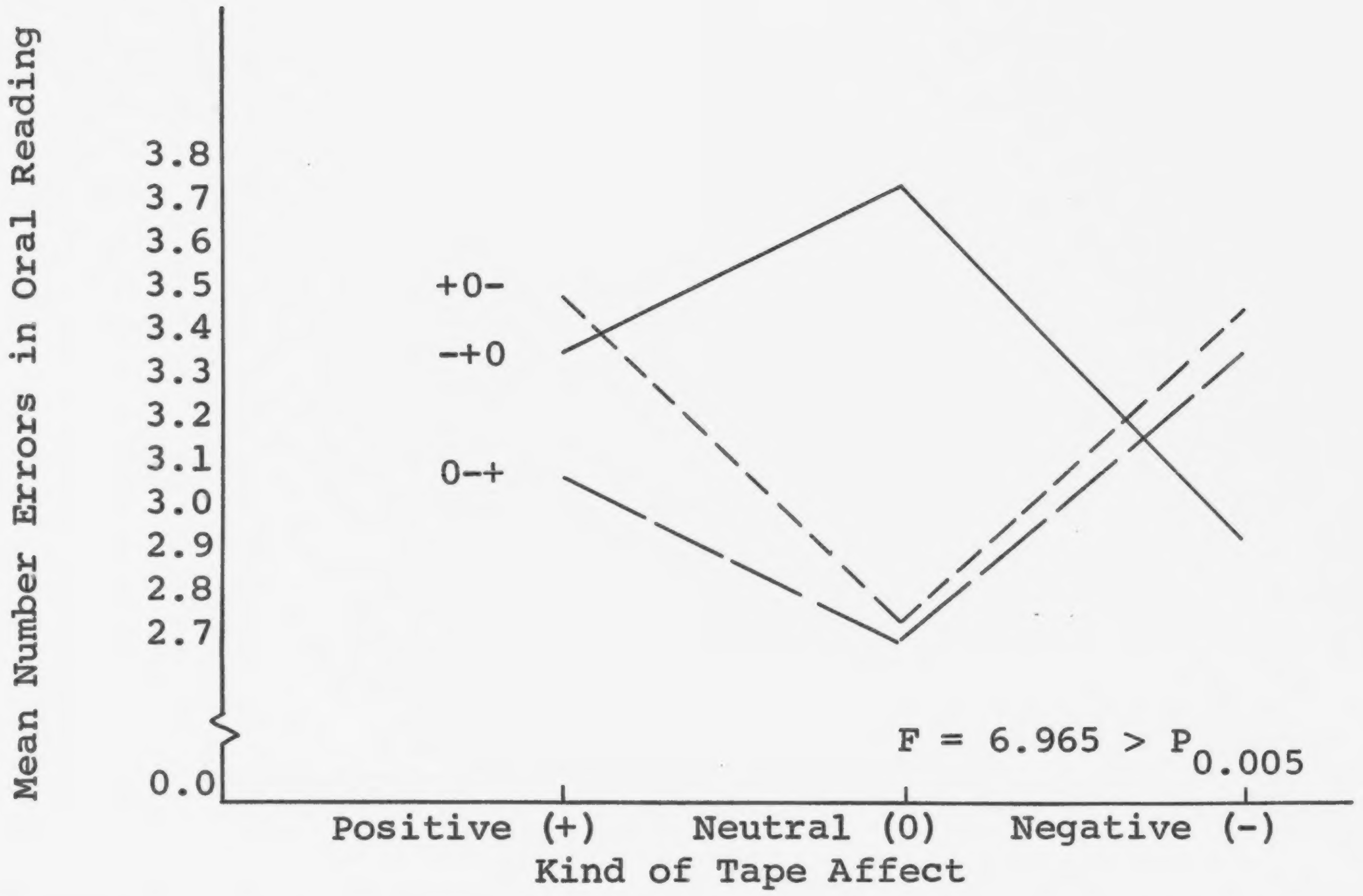

Figure 3. Oral Reading Errors as a Function of Presentation Order and Kind of Affect

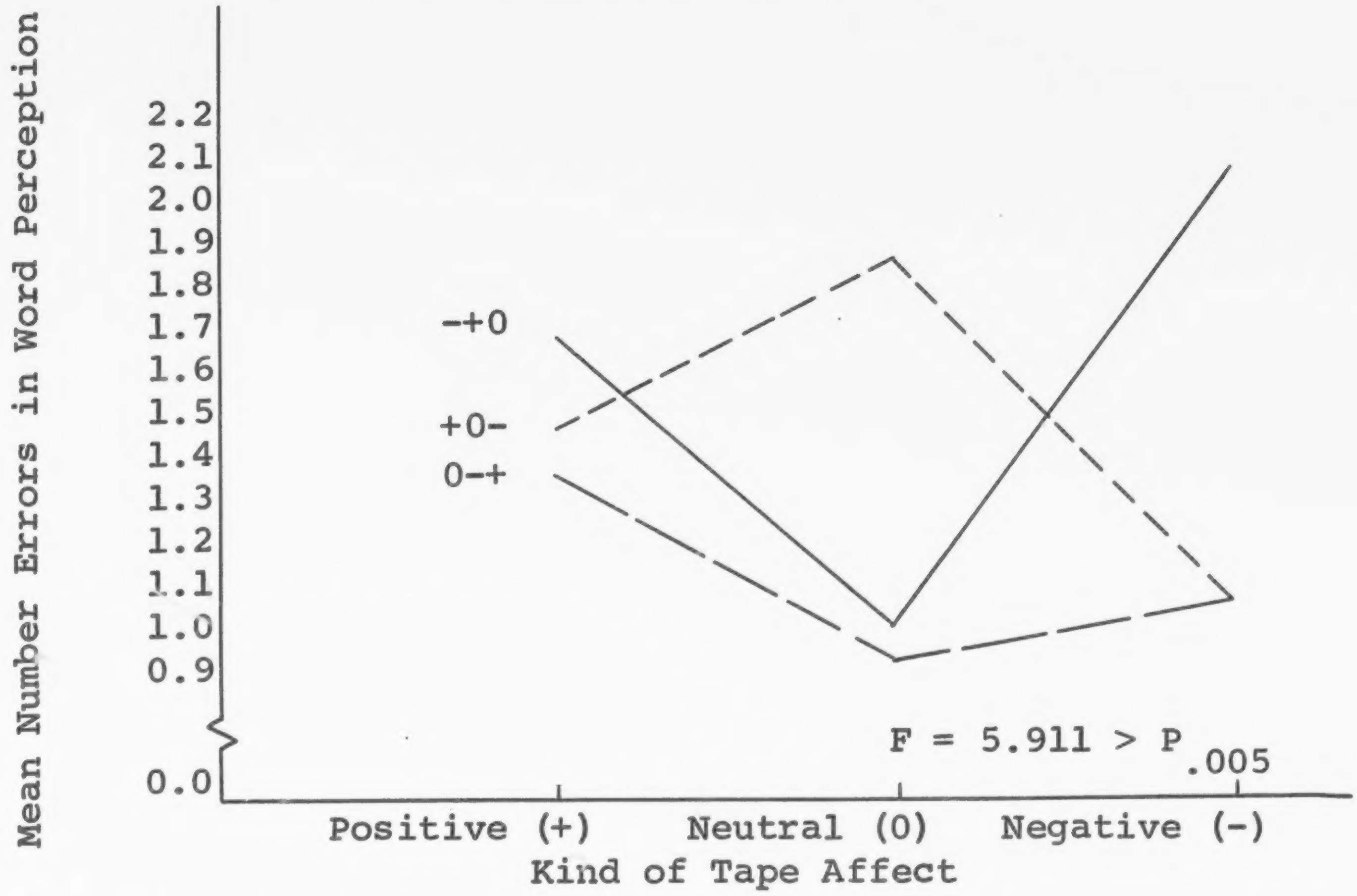

Figure 4. Errors in Word Perception as a Function of Presentation Order and Kind of Affect

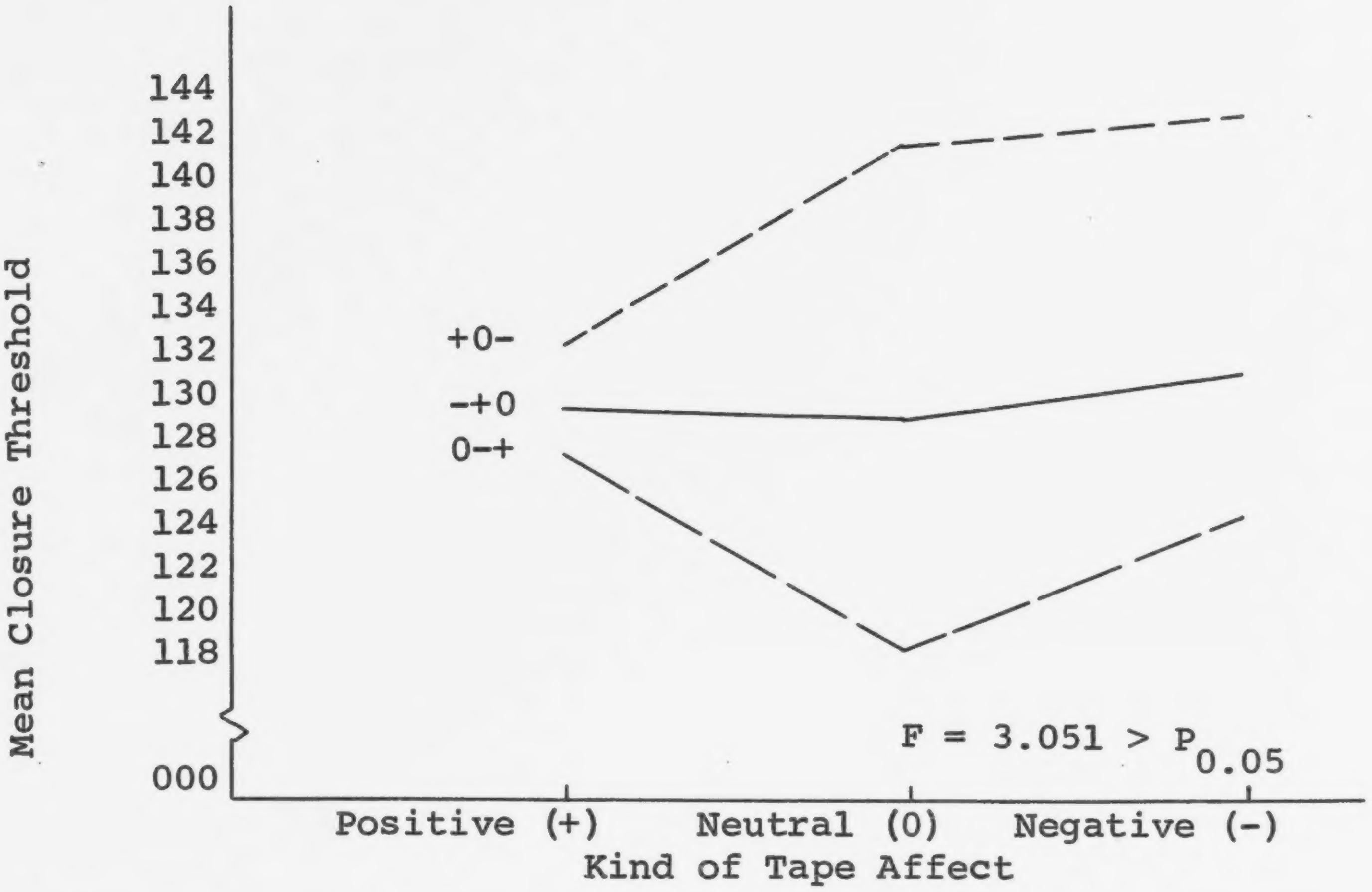

Figure 5. Closure Threshold as a Function of Presentation Order and Kind of Affect

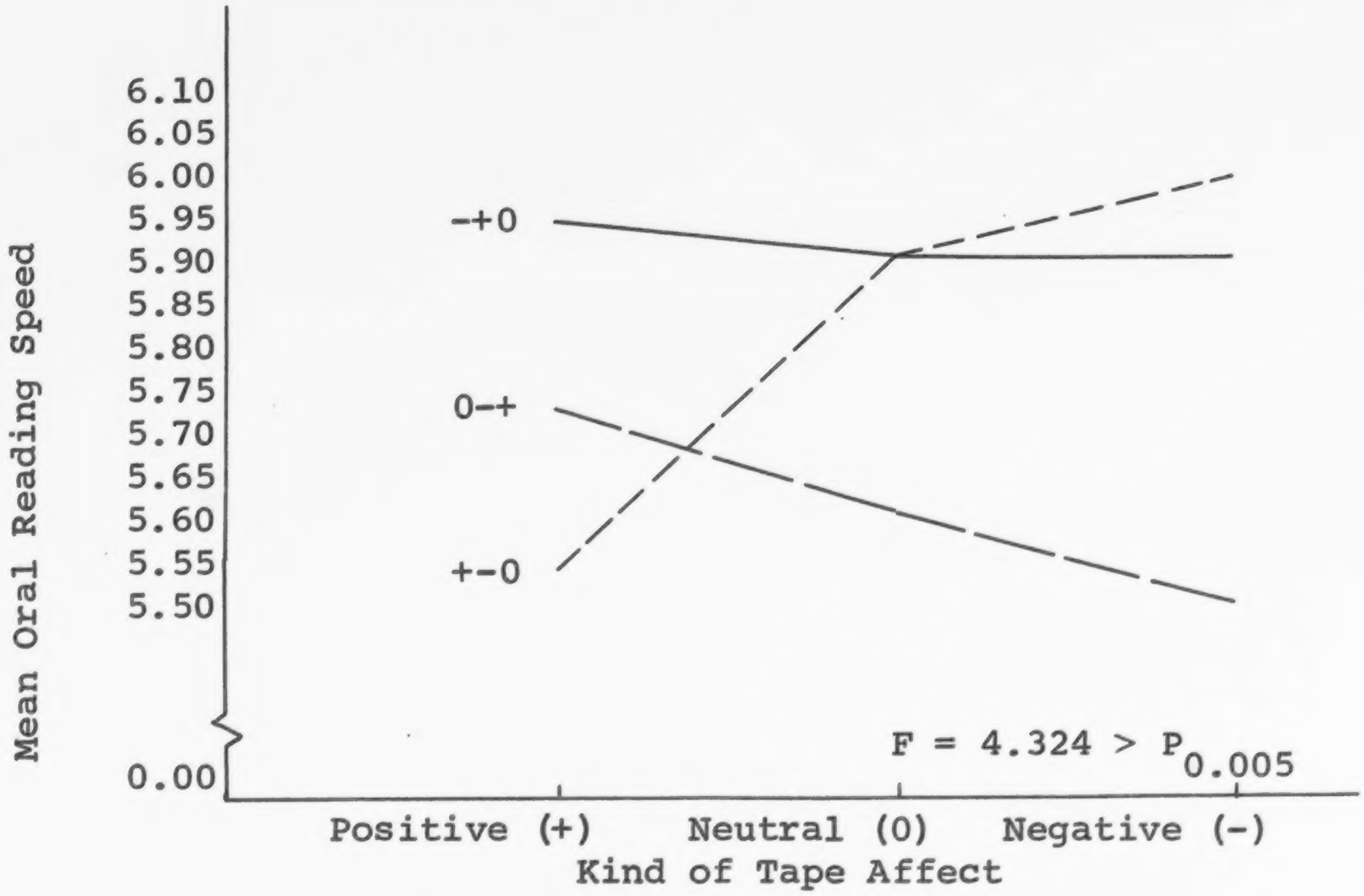

Figure 6. Oral Reading Speed as a Function of Presentation Order and Kind of Affect

the mean values of the -+0 order is an inversion of the mean values for the +0- order. This pattern is replicated in Figure 2 (number perception) although it is likely that the effect of the 0-+ order influenced the size and significant level of the F ratio which this figure represents.

Figures 3 and 4[1] also illustrate the same patterns of inverted mean performance level for oral reading errors and for errors in word perception. However, these figures are based on small values for the variables so that the real differences in performance are small and, consequently, less meaningful.

Figures 5 and 6 reveal similar patterns which differ from those in Figures 1 through 4. It can be seen that the +0- order again differs from the -+0 and that the 0-+ order, which is similar to the -+0 order, most likely contributes to the significant level of the interaction terms. This pattern must also be viewed with caution as Figure 6, which deals with reading speed, is based on small real differences in the rate of reading.

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[1] The inverted contours of Figure 4 are caused by the nature of the variable which measures errors in perception, not the number correct as is the case with Figures 1 and 2.

Summary

The results reported in this chapter revealed that the affective quality of the female client comments differentially affected number perception and word perception performance. The male client comments affected number perception and coding significantly.

Age and experience groups differed in their performance on these variables: oral reading errors, number coded correctly, number of errors in coding, and word perception (for one tape condition only). However, randomly formed subgroups did not differ in their performance on any of the variables subsequent to listening to the tapes.

A series of significant group by presentation order interactions were also found to be present for all variables except oral reading speed (female tape condition only) and errors in coding (female and combined tape condition).

The meaning of these significant results will be discussed in the following chapter.

CHAPTER V: DISCUSSION

The results presented in Chapter IV evidence that tape listening does influence the subsequent elicited cognitive behavior. The following pages will discuss the principal findings in relation to treatment differences, order effects, and group differences. A discussion of the practical and/or theoretical implications of these findings will follow each section.

The Effect of Tape Listening

The major purpose of this study was to determine whether listening to client comments of different affective tones influenced the subsequent cognitive behavior of SCs as measured by performance on simple tasks. Hypotheses concerned with these treatment differences were stated in null form and predicted that no differences in performance would occur as a function of the affective tone of the comments. The hypotheses were tested for the seven dependent variables under each of three conditions which evaluated the impact of male tapes only, the impact of female tapes only, and the combined impact of the two tapes of each affect.

The results of these analyses yielded three patterns of findings. First, it was found that all hypotheses for the three analyses were sustained for four dependent variables: closure threshold, oral reading speed, oral reading errors, and coding errors. This indicates that the above variables were not directly sensitive to the tape listening experience. Second, hypotheses which concerned word and number perception performance were rejected when the previous listening experience involved the female client comment. In addition, hypotheses concerned with number perception and coding were rejected when the previous listening experience involved the male client comment. And third, hypotheses for all seven dependent variables were rejected when the client comments were combined.

These findings indicate that the SCs' reactions were more a function of the specific comment in spite of their being classified by judges as similar in affective tone. Because the comments differed in content, it was not possible to establish whether the sex or content was responsible for the different reactions. This finding is similar to one reported by Gamsky (1965) which concluded that client-actor sex played an unclear role in the responses of the subjects in his study.

It is meaningful to evaluate the character of performance on the dependent variables which did appear to be responsive to the affective tones of the tapes.

Significant differences in performance on word perception and number perception subsequent to listening to female tapes were present in four analyses of variance using different subgroups. This pattern would not have been sustained for all analyses if the differences were due to chance or some statistical artifact.

The results of the word perception task must be considered with caution, however, because the raw score differences between the means are small. Further evidence for caution is found in the results of the number perception task which manifests larger raw score differences in a different pattern for a functionally similar task. The sub analyses indicated that the two affectively loaded tapes resulted in a greater number of errors in word perception. The number perception findings revealed that significantly more errors in perception were made subsequent to listening to the positive comment than to either the negative or neutral comments.

Evaluation of the effect of male tapes on performance yielded significant differences on number perception and the number correctly coded variable for analyses which accounted for order of presentation of the comments. Interpretation of these findings is more difficult because no significant differences were present when other groupings of the SCs were the basis of analyses.

The results of the number perception task must be viewed with caution as the F ratio achieved significance at the 0.05 confidence level only under conditions which accounted for variance related to presentation order. However, as was pointed out in Chapter III, the number perception variable was a highly controlled task which retained a high degree of reliability. Consequently, the findings are regarded as meaningful.

The differences in mean number of items coded correctly were significant at the 0.01 confidence level and subsequent analyses revealed that the positive and neutral male comments elicited faster, accurate coding behavior than the negative comment. This configuration of findings would suggest that listening to the negative tape had a debilitating effect on coding behavior.

It is tenable to draw two conclusions from these findings. First, tape listening does not alter performance on closure threshold, oral reading speed, oral reading errors, and errors in coding. Second, tapes of different affective tones do alter subsequent behavior on word perception, number perception, and coding correctly. However, the results do not represent consistent patterns of differences in relation to the type of affect and the direction of the differences on different variables. These findings have important theoretical and practical implications.

Implications

It will be remembered that the rationale proposed that emotional reactions were considered to have priority over cognitive behavior and that it was assumed that the energy available for reacting was limited in quantity (see Chapter I, pages 7-18).

An analysis of word perception performance displayed the predicted pattern of results: higher error frequency subsequent to listening to the affectively loaded tapes. However, the performance on the number perception task, subsequent to listening to the same comments, indicated that better performance occurred as a function of the neutral and negative tape listening experiences. These findings suggest that only one tape--the supportive one--evoked an emotional reaction which resulted in less effective cognitive functioning.

According to the rationale, this implies that the supportive tape evoked sufficient emotional reactions to adversely affect cognitive behavior. Logically, it seems unlikely that the least threatening tape would evoke more emotions and thereby draw sufficient mental energy to impair cognitive behavior; although, it is conceded that positive emotional experiences can be intense.

In the case of coding, the findings indicate that fewer items were coded correctly subsequent to listening to the hostile male comment than to either the supportive or neutral comments. These results are in basic agreement with the research reported by Sarason, Mandler, and Craighill (see page 36) and they clearly reveal the contrasting character of cognitive performance subsequent to listening to male hostile tapes: for number perception performance was improved, for coding it was significantly poorer.

The refinement in the rationale which can account for this contradiction lies in the complexity of the task examined when the individual is emotionally aroused and using energy for discharging the emotion. Tasks of greater complexity require more energy for effective performance and it is likely that they will not be performed as well as simpler tasks which require less energy.

It is not possible to establish from this research that number perception and coding are of different complexities cognitively. Logically, they would appear to be different and statistically they are not related to each other in a significant way. The mean intercorrelation between the tasks was 0.220 ($P_{.05} \geq 0.325$) and lends weight to the conclusion that they are measuring different cognitive functions which may well be of different levels of complexity.

Symonds has indicated in his review of several studies of learning (1964, 66) that the simple tasks such as rote memory and eyelid conditioning are often performed better under stress than no-stress conditions. He further stated that the effect of stress on more complicated cognitive tasks was debilitating rather than facilitating. And this appears to be the appropriate explanation for the inverted configuration of findings: the hostile tape increased efficiency of performance on the simpler tasks of perceiving numbers flashed on the screen while coding performance was crippled because its nature was more complex and demanded more mental energy for completion than was available.

On a more practical level, it would be logical to assume that either the process of listening to and critiquing tapes or speaking with counselees is more complex than the tasks employed in this study. And if this assumption is true, then both critiquing and counseling would be affected by the type of affect expressed to the SC. Further research focused on the level and complexity of cognitive function required in effective counseling would provide useful information related to the validity of this assumption.

The Effects of Presentation Order

Null hypotheses related to the interaction of presentation order and kind of affect predicted that no differences in performance on the dependent variables would occur. Seventeen of these hypotheses were rejected. This consistent pattern of findings reveals that a considerable amount of variance is a function of the order in which the tapes are heard and that the order affects the performance of the SCs on the cognitive tasks. Figures 1 through 4 reveal the same pattern of inversions for +0- order compared to the -+0 order. This pattern persists for Figures 5 and 6, but with a different shape to the figures. These inversions, which are taken from the combined tape analysis, graphically illustrate that performance is affected by the presentation order.

The number of items coded correctly (Figure 1) and the number perception task (Figure 2) appeared to be most sensitive to the interaction. This is revealed not only by the magnitude of the F ratios, which exceeded the 0.005 confidence level by thirty-two and six points respectively, but also by the size of mean raw score differences in performance.

Further evidence of the sensitivity of these two variables is found in the substantial reliability coefficients reported in Chapter III. This is contrasted with the closure threshold and oral reading speed variables which have comparable reliability but less significant interaction terms and raw score differences in the means.

Oral reading errors (Figure 3), word perception errors (Figure 4), and oral reading speed (Figure 6) yielded F ratios which are significant at the same level. But the mean raw score differences are small and consequently indicate less conclusively that real sensitivity to the tape listening experience exists.

The conclusions from these findings are of two kinds. First, it is apparent that the dependent variables most sensitive to interaction effects were the number perception task and the number correctly coded variable of the number coding task. And second, that the affective quality of the comment and the order in which it was heard influenced performance on the dependent variables.

While the lack of group differences as a function of order indicate that the order of presentation taken as a whole does not significantly modify behavior, the interaction terms do reveal that certain orders effect cognitive behavior. Specifically, the results suggest that the SC does not function as well at first if he listens to the hostile tapes. Indeed, if the SC does not function as well in such simple tasks as coding and number perception, there are important implications for performance on more complex tasks related to counselor training.

Implications

With regard to training, perhaps it would be advisable to initiate the beginning practicum with recordings of client comments whose experiences were either positive and supportive of the role of the counselor, or not related to the counselor's behavior at all. The former of these alternatives seems particularly acceptable in that it would provide the new SCs with important information about what is helpful and meaningful to the counselee. Conversely, the comments of hostile clients would negate the importance of counseling and indirectly, the importance of the practicum. The result would be an increased emotional reaction on the part of the SCs which would result in a decrease in the effectiveness of their cognitive behavior. This might take the form of less perceptive thinking and interaction in the practicum.

A second implication is related to the kinds of clients to which the new SC should be exposed. If listening to a client comment of a hostile nature evokes poorer functioning in the SC, then it is evident that exposure to a hostile and difficult client would probably result in poorer cognitive performance and, consequently, poorer counseling. If possible, the SC's initial experiences should be positive so that he may be able to learn as much as possible from his experience, rather than experiencing a situation which results in a disorganization of his behavior.

While both of these implications are in support of the position recently advanced by Lister (1966), research evidence supporting the need for positive experiences to enhance the growth and development of the SC is lacking. Indeed, it must be recognized that negative experiences can be beneficial to the personal growth of an SC too.

A third implication of these findings is relevant to further research with these kinds of independent variables. The apparent effects of order are substantial enough to indicate that further research should employ designs and statistical analyses which routinely account for variance which is a function of presentation order.

Differences in the Performance of Different Groups

Three factors make it difficult to compare the results of group differences with those reported in other studies. First, the nature of the dependent variables is different in that most of the research reviewed, dealt with interpersonal check lists, judging panels, or jury-developed criteria. Only the research of Russel and Snyder (1963) and Paar (1957) used simplistic behavioral criteria and these were physiologic in nature. Second, the definition and consequent composition of the groups compared differ. And third, the nature and development of the independent variables differ in presentation mode (audio tape or client-actors), content (role played, real client comments, or client-actors), and length of exposure to the stimulus (from a few seconds to over one-half hour).

Nevertheless, the findings regarding sex, age, and experience grouped SCs are important to report and relate within the context of the limitations cited.

Sex differences

Null hypotheses relative to sex differences predicted that no differences would be found in performance on the cognitive tasks subsequent to listening to client comments as a function of the sex of the SC. These hypotheses were sustained for all analyses. This finding is in contrast to Gamsky's research (1965) which reported that counselor sex was differentially related to verbal response.

These differences may well be due to the live client presented by Gamsky as contrasted with the taped comment which required no direct SC interaction and involvement. In addition, the verbal response of the SC was the dependent variable and this was defined in relation to the expression of hostility. Further research is needed regarding the effect of sex on the responses of SCs.

Age differences

Null hypotheses relative to the age groups predicted that no differences would be found in performance on the cognitive tasks subsequent to listening to the client comments as a function of the age of the SCs. These hypotheses were sustained for five of the dependent variables: errors in word perception, errors in number perception, closure threshold, oral reading speed, and the number of items coded correctly.

Null hypotheses comparing the age groups on errors in oral reading and errors in coding were rejected in consistent patterns. SCs under thirty years of age made significantly more errors in oral reading subsequent to listening to the tapes. In addition, they made significantly more errors in coding subsequent to listening to the male tapes and when the tapes were combined. While the pattern was not sustained at a significant level for the female tapes as well, the magnitude of the F ratio is noteworthy because it is much greater than its counterparts of sex and experience based groups.

These findings contrast with Chapline's research (1964) in that she found no major differences in performance as a function of age. However, the dependent variable in her study was the written responses of subjects to three sequences of taped client comments which were not controlled for affect type. Thus, it bears little resemblance to the independent and dependent variables used in this study.

The fact that the younger group of SCs was consistently less accurate in reading and coding seems more meaningful in light of the fact that speed in reading and coding did not differ significantly when the groups were compared. These findings tend to counter the logical expectation that the younger group might have regarded the number of items coded as a more desirable criterion and tried to do more items with less concern for accuracy. Similar logic applies to the oral reading speed criterion which also was not significant.

Applying the rationale to these findings, it would appear that the younger students reacted to the listening experience more emotionally. That is, the discharge or emotions was great enough to result in significantly less energy being available for performance on these two variables at an equivalent level to that of the older group. Conversely the older group of students did not react as intensely to the tape listening, as manifested by their superior performance on these two variables.

Assuming that the rationale is valid, three questions may be asked regarding the intensity of the reactions of these two groups. First, were the younger SCs more involved and, consequently, reacting more intensely to the comments? Second, were the older SCs just as involved, but better able to cope with the emotional reactions and deal effectively with the tasks? Or, third, had the older SCs listened to so many tapes that the general experience was not emotionally meaningful? Further research would be necessary to answer these questions.

Experience differences

Null hypotheses relative to experience differences stated that SCs with more than three years of experience in education and/or counseling would not differ from those with less in relation to their performance on the seven dependent variables subsequent to listening to the client comments. These hypotheses were sustained for all analyses related to number perception, closure threshold, oral reading speed, and errors in coding.

Using the male client comments as the basis for analyses, null hypotheses related to word perception, oral reading errors, and number coded correctly were rejected. The less experienced SCs functioned more effectively in word perception and the number coded correctly variables while they functioned less effectively in oral reading, making more errors. The explanation for these contrasting results is probably due to the factor of differences in the complexity of the tasks performed; word perception and coding being performed better as a function of the evoked emotions while reading performance was poorer.

The question of an artifactual significant result must be entertained in relation to the findings of word perception and oral reading errors because the findings were not replicated for other types of client conditions. In addition, the oral reading errors criterion barely achieved significance at the 0.05 level of confidence (by 0.06 points).

The most compelling finding relates to the number coding performance which has already been shown to be sensitive to treatment differences and order by tape interaction effects. Null hypotheses for the three types of analyses were all rejected at the 0.01 confidence level. The differences were in the same direction for all three analyses: the less experienced group performed at a consistently better level than the more experienced group.

These findings contrast with those of Bohn (1964) and Chapline (1964). The former author found that more experienced counselors responded with significantly more nondirective responses than undergraduates in an Introductory Psychology course who were the less experienced group. Bohn's comparison, while valid to make, is relatively meaningless in the context of this study which dealt only with graduate students in a counselor education program.[1]

The latter author also found performance differences when she compared SCs with graduate students in Administration. The SCs, of course, wrote better responses to client comments than the students in Administration.

The problem of interpreting these contrasting findings is again formidable because of differences in the independent variables, the dependent variables, and the criteria of experience. Logically, it might be expected that the less experienced SCs reacted more strongly to listening to the tapes because they knew that they were participating in a study which was designed to measure effectiveness in a field to which they were relative new comers. Their reaction to the experience was energizing--causing them to code faster because they perceived coding many items as desirable. Conversely, the more experienced SCs reacted less intensely because participating in the project and listening to the tapes was not a new experience for most of them. Their reaction was more quiescent and relaxed and performance on the coding task was not perceived as a significant index of their effectiveness as a counselor. However, this explanation opposes the interpretation of treatment differences which revealed that hostile, and presumably threatening, comments reduced the effectiveness of coding behavior.

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[1] One wonders about the meaningfulness of the results in that it would be logical to assume that untrained subjects who were at least several years younger than the experienced group would respond differently.

Clearly, then, a contradiction exists which does not appear to have a solution manifested in the findings of this research. It is apparent that the relationship between experience and performance are complex. And it is possible that these variables are also related to the complexity of the cognitive variable. Further research would be necessary to clarify relationships between these variables.

Summary

There is sufficient evidence to support the thesis that listening to tapes judged to be of different affective tones influences certain kinds of cognitive behavior. Tasks which seems to be less complex, such as word perception and number perception, are often done better following a hostile tape while more complex tasks, such as coding are not done as well. In general, number perception and coding seemed to be most sensitive to the reactions of the SCs to listening to different kinds of tapes.

An analysis of order by tape affect interactions revealed that a pattern of significant F ratios were present. And the major finding was that when the tapes were presented in the positive, neutral, hostile order (+0-) it resulted in an inversion of performance from that of the -+0 order. This was true for six of the seven dependent variables under the combined tape conditions. The largest differences were again found in relation to the number coding and number perception tasks.

A number of group differences were also found when the criteria of age and experience were considered. Many of these findings conflicted with those of previous research indicating the need for further research.

CHAPTER VI: SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FURTHER RESEARCH

A review of the literature revealed that the tape recorder is being used extensively in the education of counselors and that no studies had examined the impact that tape listening had on the cognitive behavior of the SC.

Using the work of Rapaport (1952) and Sarbin, Taft, and Bailley (1960), a rationale was developed which stated that the emotional processes of an individual are more basic to his functioning than cognitive processes. It was assumed that a limited amount of mental energy exists and that the process of experiencing emotions would draw on the energy first. It would follow, then, that cognitive functions could be performed with a greater or lesser degree of efficiency; depending on the complexity of the task and on the amount of energy available at that point in time.

A survey of related studies revealed that differential reactions to client-actors and taped client comments were present when the affect of the comments varied. Research also revealed that tachistoscopically presented words, numbers, and closure figures were sensitive to emotional changes in the perceiver as were oral reading and digit symbol tasks.

These findings were most frequently reported in relation to the emotion of threat which limited their applicability because this research only assumed that an emotional reaction would take place from listening to the tape.

The research design incorporated six independent variables in the form of role played client comments which were either supportive of the counselor, hostile towards the counselor, or neutral in relation to the affect expressed towards the counselor. The comments were about five minutes in length with a male and female comment of each affect type.

Following listening to a tape recorded comment, the SCs were asked to perform five tasks which yielded seven dependent variables: errors in word perception, number perception, closure threshold, oral reading speed, errors made in oral reading, number of items coded correctly, and number of errors made in coding.

Six test forms were made up, employing the relevant controls for each variable and the reliability of the instruments established. The order of presentation of all variables was rotated to minimize order effects.

An inspection of the data revealed that three variables were skewed and an appropriate transformation was applied to normalize their distributions.

The research design employed a randomized group analysis of variance as its statistical model. This permitted the simultaneous testing of three kinds of hypotheses for the seven dependent variables. Analyses were performed according to three classifications of the independent variables: male tapes only, female tapes only, and both tapes combined.

The three kinds of hypotheses stated and tested are represented by the following examples:

1. Treatment differences (the effect of tapes)

   No differences will be found in performance on the seven dependent variables as a function of listening to tapes of client comments which are positive, neutral, or negative in affective tone expressed towards the counselor.

2. Group differences (the pooled influence of tapes on groups of various compositions)

   No differences will be found in the performance of males and females on the dependent variables subsequent to listening to tapes of client comments which are positive, neutral, and negative in affective tone expressed towards the counselor.

   > (This hypothesis was repeated for student counselors of different age groups, educational experience levels, and for comparing three randomly formed subgroups which heard the tapes in different orders.)

3. Interaction effects (the interrelationship of group by treatment differences)

   Performance on the seven dependent variables is not a joint function of presentation order and the kind of affect heard.

Findings and Conclusions

The analyses of variance led to the rejection of many null hypotheses and the general conclusion that tape listening did influence the subsequent cognitive behavior as measured by some of the tasks. The following major conclusions reflect those hypotheses which were found untenable and those hypotheses which were accepted in consistent patterns.

1. Treatment differences
    a. A considerable amount of variance seemed to be a function of presentation order. Analyses which accounted for presentation order revealed more significant findings than those that did not.
    b. The number perception and number coding tasks seemed to be most sensitive to the experience of listening to the tapes.
    c. The quality of performance was related to the complexity of the task performed subsequent to the tape listening. For example, number perception improved significantly subsequent to listening to the hostile male tape while the number of items coded correctly decreased significantly.
    d. No clear pattern appeared to be present which

was related to the sex of the client comment and the type of affect expressed.

2. Group differences

    a. The findings of this study were not consistent with those reported in other research which studied sex, age, and experience factors. These contrasting results are probably due to differences in the independent and dependent variables and the definitions of the groups. The findings may be summarized as follows:

        i. No significant differences in performance were found as a function of the sex of the SCs.

        ii. SCs under thirty years of age made significantly more errors in coding and oral reading than the older group.

        iii. SCs with less than three years of professional experience in education coded significantly more items correctly than the more experienced group.

    b. The three randomly assigned subgroups did not differ in their performance on the cognitive tasks when their performance on the tapes was pooled and compared.

3. Interaction effects
    a. No significant differences in performance were found as a function of sex, age, or experience levels of the groups and the type of affect heard.
    b. The subgroup of students who heard the tapes in a supportive, neutral, hostile order (+0-) performed in a significantly different fashion on the respective tapes from those who listened to the tapes in a -+0 order. The patterns of performance for six of the variables were inverted in the same way.

Limitations and Implications for Further Research

One limitation of this research was that it assumed that the SCs were involved in the listening process and that they would react emotionally to the client comments. Further research might focus on the effect of tape listening with a counselor response required subsequent to listening to the client comment and also without a response being required. An evaluation of subsequent performance on the tasks might reveal more clearly the relationship of involvement to the subsequent cognitive behavior.

A second limitation was related to the scope of this study. It was not the intention of this study to compare the response of counselors who were rated as effective with those who were rated as ineffective. Because differential reactions do seem to occur as a function of the affect of the client comment, it would be important to know if cognitive performance is a function of the effectiveness of the counselor. If such a relationship does exist, further research might be able to develop a measure with the ability to differentiate effective counselors from ineffective ones. The identification of such differentiating variables would represent an important contribution to the profession.

A third limitation of this research was related to the lack of clear distinctions in the levels of complexity of the cognitive tasks. Implications about the relationship of task complexity to complexity of cognitive behavior in counseling were drawn. But further research is necessary to determine both the complexity of cognitive behavior in the counseling process and the relationship of this behavior to the emotional reactions of the counselor.

APPENDIX A

INFORMATION SHEET

GENERAL INFORMATION

PLEASE FILL OUT THE QUESTIONS LISTED BELOW TO THE BEST OF YOUR ABILITY

1. Name____

2. Address____

3. Telephone_________________

4. Age________________________ 5. Sex___________

6. Education:

   a. Kind of undergraduate degree (A.B., B.S., etc.)_____

      Major_________________, date of graduation__________

   b. Graduate degree? (EdM, M.A., etc.)__________________

      Major_________________, date of graduation__________

   c. Other degrees?______________________________________

      Major_________________, date of graduation__________

7. Number of hours completed in counselor education________

8. Number of hours for which you are now registered________

9. Vocational:

   a. Number of years you have worked in education other than in counseling__________________________________

   b. Number of years you have worked in counseling_______

APPENDIX B

JUDGE'S RATING SHEET

To:

From: Mark B. Peterson

Subject: Evaluation of Six Tape Excerpts

The accompanying tape has six excerpts of about 7' to 10' length recorded on it. Would you please listen to these evaluating them according to one of the following four categories:

CATEGORY	DEFINITION
A	This excerpt would indicate that a basically positive relationship seems to exist between client and counselor. The overt and/or covert feeling directed at the counselor seems to be positive in terms of his role as a helper.
B.	This excerpt would indicate little about the relationship between client and counselor. There is little overt or covert feeling directed at the counselor which gives clues to the client's feelings about the counselor as a helper.
C	This excerpt would indicate that a basic dissatisfaction with the counselor and the counseling relationship exists. Overt and/or covert feelings directed at the counselor would indicate that problems with the relationship were present.

D	Classify any excerpt which you cannot identify by the above categories under "D". Please describe what seems to be different or unclassifiable about this (these) excerpts.

Comment:

Any General Comment?

Signature:____________________

____

Date:_______________

APPENDIX C

TYPED SCRIPTS OF CLIENT COMMENTS

MALE NEGATIVE TAPE (-M)

Ah, you know it seems like I come in here every week and I sit down and I start telling you about what's on my mind. And then about what's happening, how hard it is for me to get out of the shop, just to make the appointment even with this card you gave me. And, ah, you don't know what's really going on, you know. Actually, for you to really understand me . . . . Why how the hell can you understand me? You come in here and, you know, you've got a nice suit on and you come in at eight and you leave at four. Well, I'm in here before you come in and I'm in here after you come here. You know, I live here in this goddamned place!

So you come in and you're sitting down with me and the idea I'm getting from you is as if you understand how I feel. How can you understand how I feel? Nobody could understand how I feel or any other guy in this place, unless you went through the same thing. You know what would really help? What would really help is if you or Legal Medicine would come in here and just walk around with me the whole day.

Just see the shit I have to take. What I have to go through everyday, where I can't even look at a guard. You know, you know that you can get locked up in here for silent insolence. Do you know what silent insolence is? I don't know what it is either, but you can get locked up and you can lose good time.

In other words, you know, sometimes I have trouble with my ulcers. Alright, so let's say I'm in line and I get a pain in my stomach, and I, I'm looking at a guard, you know and I got a pain in my stomach and I got a look on my face, of pain. Do you know that, that guard could come over to me and say, I don't like the way you're looking at me, let's go Number Nine. Let's go! What do I say? No? It wasn't you, I got a pain in my stomach? Bullshit! I walk with him. And who do I talk to? Uh? And you mean you understand this? Shit! You couldn't understand this.

You know, ah, --- sometimes I look at you and I wonder what the hell you're here for. You know, like what's your bit? What are you here for? What are you doing? Everytime I say anything all you want to talk about is my mother and my father and when I was a kid. Look, I don't care about that, that's the past, that's gone!

I want to know about the future, what's gonna happen to me? Am I going to get out of this goddamned jail? And not come back? That's what I want to know.

I don't want all this crap about your mother didn't love you and your father was a drunk and beat the crap out of you! I'm not interested in that. Who wants to think about that? Would you want to think about that?

Shit! Yeah, so you nod and ah, that's supposed to help me. That isn't what's going to help me. What's gonna ---. You know what would help me? If you were a lawyer, maybe you could help me. You know, if you could find a technicality to get me the hell out of here. Then, maybe you could help me, but, ah, sitting down and talking and, ah, I go out of here.

You know I go out of here some days after seeing you and I'm so goddamned confused I don't know my ass from my elbow. I don't! I really don't know which end is up. I go out of here and my head is spinning. Somebody says hello to me and I want to punch him in the mouth and you know what happens if I do, lockup! Lockup!

You want me, ah, oh, yeah, yeah, --- yeah you want me to sit here and tell you how I feel. Uh? You don't know the guys in here like I do. You don't know what the hell goes on in here.

FEMALE NEGATIVE TAPE (-F)

I tried to call you this week. All sorts of things started happening. And you're just like, you're just like my folks, you know. I tried to get hold of you and things were bad. I tried to talk and your secretary said no, you were gone, you were at class. One time she said you were at another session.

You know when I first started coming here you told me that you'd be available to me when I needed you that, oh, just call you anytime, you know. Call you at home, call you at your office, anytime. It would be OK. And I did, this week I was really in bad shape. I needed to talk with you and I, was ridiculous, I couldn't get hold of you. Now, what good does it do to come here?

I went out and I wandered around by myself. And tried to call again, and you still weren't in. You know, like why should I even keep coming?

And like now, you don't even say anything, you know. I come in and I say, I'm telling you I'm angry. I, I, you know, nobody even pays any attention to me; nobody, nobody listens. Maybe that's wrong, you're listening, but what do you say about it?

You don't help me. You said, you told me about it. You were going to be available. And all you do is sit there endlessly. You know --- you don't say anything, you don't tell me what to do, you don't explain where you were. So what, that's alright. Don't pay any attention. I'm not really that important anyway, you know, you've got other things to do.

I tried to call my folks, too. They weren't home. Yeah, you're just like they are, ---. Lots of big talk. Lot's of saying I'm here, I'm strong, I'm your support, I'm this, I'm that. When it gets right down to the basic, the basic problem and some of my needs, some of the time I need some people, you're not available.

I don't know. It seems like such a waste of time ---. When I first started talking about coming in here, you know. They told me that, that this was one of the things that was going to help me. I come in and talk over things with you and maybe I could get some things clarified. And I haven't gotten anything clarified since I came in here!

If anything, I'm more confused. I get more tangled up, you know, the more I come in here and talk, the more tangled I get and, and all I get from you is a lot of, oh I know, it must be hard or you feel angry or eh, it's a lot of junk!

I can have people outside tell me that. I don't have to waste all my time sitting around talking to you. I can be doing things. Like I could be going on a date. I could be studying, I could be doing other things.

I could get a job! Well, but I've got to come in here a couple times a week and talk to you and what do I get from it?

You're not even going to say anything now? --- Yeah ---.

I don't know. You know I, I really am tired coming here. I really think I'm gonna quit ---.

You haven't got anything to say to that either, huh? Just quit, 'cause you wouldn't even care. I'm another number in this place to you. The professors are like that, you're like that!

MALE NEUTRAL TAPE (OM)

You know I, I've been talking about this whole idea of, of finding self in a world of work and I had a --- an interesting experience the other day. I was coming out of a class --- in one of the upper stories of the building at night and the visibility happened to be exceptionally good. So you had the sort of panoramic view of the whole city, which, by the way is kind of impressive, I think anyways. The Government Center, and the Prudential and all of the modern construction.

Well, anyway, I just stood in the window for quite a long period of time, --- initially I, I was just --- sort of feeling the excitement that was kinda going on below me, but then I began to think, as I always do, about --- this concern as far as direction goes and it was interesting because here the whole city was, was down below and I began to sort of look, you know, from one corner of the --- horizon to the other, and just beneath and, ah, trying to envision sort of myself --- in the scheme of things as, as chaotic as it appeared above, there was, there was, order to it.

And I just tried to, to imagine where I might --- where I might fit. And I, I somehow had, had, drew a blank after a period of time. I just, --- my thinking sort of ended. I, I kinda felt frustrated, because I wasn't sure. I, I didn't have a feeling of satisfaction that there was someplace.

And then as my, my thinking and my viewing, ah, continued, I looked over the Mystic River Bridge and beyond, ah, to suburbia, which naturally then became sort of a figment of my imagination as I began to picture it, but, ah, going over it, nonetheless, over the bridge in my own thinking to, to suburbia where we're living now. And thinking of the local --- community --- and all that goes on there.

And sort of asking myself the question, well if not here immediately below me then what about out --- in suburbia and I began to think of all the, the nooks and crannies and --- figuratively speaking, open doors --- that are in a suburban area. So, I began to envision sort of where I might find myself locationally out there. I began to sorta rehash the year --- that --- we've spent out there.

And thinking about the efforts that we have made and failed to make as far as integrating into the community, although this really didn't have so direct bearing on location, ah, has more social implication, but it's still sort of --- but I still just thought about it. And, and sort of wondered if there was some, some place for me out there.

And again, I --- came away in my thinking with the somewhat of an uneasy feeling of just feeling--and this is, this is an interesting thing--feeling that although as in the city there might be a lot of things that I would like to do and things that I could do, I, I still felt an incompleteness, a feeling of not really, not really fulfilling myself in terms of what vague goals and aspirations I might have.

FEMALE NEUTRAL TAPE (OF)

Well, you know, it happened again! You know, you sorta, as a unmarried female, you, is, you sorta get to the point where people stop asking you why you didn't get married and why you haven't got married and things. But every once in a while somebody decides that, ah, they really have to find out, ah, how come a nice person like you, never got married? And why, you know, this happened to me just the other day. Somebody that I've been relating with, um, mm, quite comfortably in the consulting job that I, I have. And all, the, all the old questions and feelings that a, that I had when I was a lot younger, sort of came up and it was rather interesting that I could look at some of the questions and some of the doubts differently, and yet, I found myself, you know, wondering, why the heck didn't I get married!

Well, so many people say, well, um, must be you didn't want children. Well, you know, that didn't have anything to do with it at all. Ah. Oh. But. For a long time, I used to answer it, by saying nobody's asked me, but I guess I've just gotten out of the habit of dealing with the dignity of the question, because I found the other day that I couldn't answer it. I couldn't deal with it. I couldn't, ah, I couldn't handle it. In my inside of me, oh, I handled it as far as an answer was concerned.

You know, why should I, ah. It's not much sense at this point in my life, ah. I got the things that I want; I can do the things that I want. And yet, ah, there wasn't the same --- I don't know, I didn't convince myself as well as I can, as I used to convince myself.

I guess, maybe, now that the, ah, the possibility of this occurring: of my marrying, ah, becomes lessened as I grow older, it, it gets harder to answer. And, yet, it really ought to be easier. But, when I stop and, and think about it, apart from the question and the, _and_ the questioning, I just feel that, ah, this wouldn't be possible for me at this, at this point in my life because I, I don't think that I could make all of the adjustments that I would be required and, and I'm not sure that I want to make the adjustments. But mostly I guess I don't think I could make the adjustments.

But I had, oh, gone along for so long thinking, well, thank God, you know, people aren't going to ask me that question anymore because it used to be that everytime I went home to visit my parents, this is the one question my mother would ask me. Well, when are you going to get married? But she hasn't asked that for quite a long time. But then somebody else does and I've been so concerned about it. Or, not, I've been concerned about my, my thinking about the question so much. And wondering, really what the heck is, a, what some of the things are that are going on inside of me. And not really being able to put my finger on it or daring to put my finger on it, I suppose.

But, ah, it's, it's very interesting that there are so many things you can't do when you're unmarried. Like I've been interested, I wanted to, ah, belong, to get involved with PTA in the town that I, ah, live in, but, ah, I can't belong because --- I don't have any children and that makes me awful mad because I think I know something about education and I think I know something about children. And yet, just because I don't happen to have children that I can't be involved--and furthermore, I pay taxes, a damn lot of taxes to that town and to the school system--but I suppose if I could belong I probably wouldn't be interested anyway; so, maybe I'm just making up all kinds of, ah, strange, ah, weird ideas for myself.

Oh, I don't know, it's kind of crazy!

MALE POSITIVE TAPE (+M)

You know it's --- it's funny, I, I never thought I'd be able to --- open up and tell anybody any of this. When I first came in I ---, as you well know, I was pretty tied up in knots. I just ---. I just couldn't get a thing out. Then it all came out a bit torn and didn't make any sense.

And now, I don't know. It's real strange, but somehow, here I've been able to --- to put things together in a way that I just was never able to before. I guess it's because it's really the first time in my life I ever felt someone's --- cared enought about --- about what I thought. Even more important, why I thought it, to sit down and listen.

Never could do it at home. And you know the boys, it's --- well --- you talk --- about stuff, but you never really get into --- why things happen. You just make a big joke out of it. Fool around in the dorm --- and here we've been able to, --- to talk.

Funny, we've been able to talk. You know I think I've done most of the, most of the talking since I've been in here. I don't really, ah --- I don't know, I can't remember what, what you've been saying exactly, but somehow it always seems to fit in with what I've been, --- been thinking and that sort of got me going to think a little bit further about some of the stuff.

And, how, gee like I was saying it just, suddenly began to fit together like, like you got a big jigsaw puzzle and none of it gets together, and finally you figure out, hey! you know that, that corner up there, there's something about it that looks familiar and you get a couple of pieces and all of a sudden, you know the whole thing begins to, you begin to get the outline and maybe you can put a couple more pieces up here and down there. And all of a sudden, you know you say, well gee whiz, it works! You know I got it! There's something about this whole thing that makes sense that didn't make sense before and really makes sense now, like it just never has before.

And then you kick yourself and you say, you know, why in bloody blue blazes couldn't I put the pieces together when I was sitting here looking at them. And, I don't know, it's

--- you can't put them together when you're alone, but when you're sitting down talking to somebody and and you have a chance to bring some of this stuff out I, I don't know. You've gotten me to see that, yeah, maybe, if I shift this piece around it will fit and, ah --- oh, I just, ah --- I don't know I got to go out and give a real salestalk for this place 'cause at the beginning I thought, oh boy! this is for the birds, but ---. I really think that you, you people here really--I don't know how you do it, but you somehow know what you're talking about. --- And you, you get interested in a person not, not like a number or an IBM card, but you really sit down and you've been talking with me as though I, you know, I'm important, I'm me, I'm somebody who counts.

And like I said before I can't do it at home and can't do it in the dorm.

Somehow all these things are --- fitting together now and --- I think I can make it for the rest of the way. And I don't feel scared about it anymore. I mean like you know, like everything's flying around and you can't grab hold of everything. But it's like, you know, you go out of the middle of the storm and all of a sudden things are calm again and you wonder why, why you were upset back then, but, --- now I figure what the heck, I can, I can take care of them, I don't, I don't need any to run or put my head under the bed or anything. I can, I can get a hold of it.

I guess you know that 'cause you, you didn't come out with any pat answers or well, --- tap me on the head and say, you know, that's alright buddy, ah, we all have these problems and sort of brush me out the door. You sat, listened and you said a few things and ah, all of a sudden it just, it just got calm again!

FEMALE POSITIVE TAPE (+F)

You know I've been thinking about what's been happening here. You know, I've been coming for quite some time and I think, perhaps, for the first time, you know, really, ah, it's really had an impression on me. I have begun to feel as though, well, there really is something, happening, ah, to me. Well, ah, 'course you, re, remember when I first started to come. It, it was so terribly difficult to talk about anything that was, ah, that really meant something to me. It was all pretty, you know, sort of superficial and, ah, vague --- but as I say that during the past week I really recognize that --- in talking with you and, having you try to, ah, understand, because I really think this is what you tried to do, and very successfully, from my point of view, anyway, ah --- that's, it's really helped in dealing with other people.

That I've, I've begun to, ah, relax, certainly with you, and tell you things that, ah, I didn't think I could ever tell anybody. Not that they were such, such terrible horrid things. Well, I guess I thought they were pretty scarey, but now that they've come out in the open and I've had a chance to air them and I guess it's the way you've responded to me that has been, been so awfully helpful. It's, it's not as though, you know, I was just sitting here talking to myself!

But sitting here and feeling that, --- what I was saying really wasn't stupid, it wasn't, you know, inane and that it really made sense, well, that it was --- well, in a way, it was, it was reasonable for me to have these feelings. That I could, could really admit them to myself. I guess, I guess one of the things I am trying to say is that --- I actually felt as though --- ah --- I, I was somebody. That I, I matter even though I did stupid things and I felt dreadfully insecure and self-conscious, ah, that there was, you know, something to me after all. That, that I wasn't just sort of a, well as I told you, just sort of a mask, you know, sort of hiding behind it and I was afraid to, to really look behind it and see what I was and I was dreadfully afraid to have other people find out.

But, I have actually felt as I have talked to you and you've talked to me that, ah, not only do I, I really count for something but, that someone else can, can actually accept me as I am. As a person, just, just like I am.

But, in talking with you, it seems as though I can, I can do this. I can make myself into the kind of person that I'd like to be instead of just floundering around, as a, a nothing. You've been so, I don't know, so human. I felt as though --- you've really wanted to listen to me. It's not just a job that you're doing in sitting there. And, ah, you know, passing the time away. That you really felt that I was worthwhile. And that, that I could accomplish something.

And, and, I don't know if, if I'm really making sense, but it's, it's been so important to me to find someone with whom I could feel comfortable, whom I felt actually cared about me as a person, --- that, that I could be completely honest with and not be afraid that I'd be laughed at. Ah. Oh, but to you everything has been completely honest and, and, ah, been real! And it's, it's just --- well the feeling that I've had here in talking with you has, has carried over into my relationships with other people. And I feel more, more steady, more stable, more able to, to come to grips with real situations and, and have something worthwhile to say and not always being afraid that maybe I shouldn't say this or shouldn't do this and maybe it doesn't look right.

I guess you've helped to give me the confidence that, that I've needed, for so long!

APPENDIX D

WORD LISTS

GREEN

Word	Number of letters in word	Word occurs 29/million or less
hat	3	
deep	4	
hunger	6	
soldier	7	
hate	4	
healthful	9	x
despise	7	x
butter	6	
gun	3	
proud	5	
trunk	5	
death	5	
feather	7	
shy	3	x
name	4	
musician	8	x
thief	5	x
tobacco	7	
husband	7	
book	4	
TOTAL	109	5

BROWN

Word	Number of letters in word	Word occurs 29/million or less
mud	3	
bite	4	
due	3	
drink	5	
fire	4	
nipple	6	x
suicide	7	x
affect	6	
party	5	
ill	3	
eating	6	
anger	5	
frame	5	
suck	4	x
working	7	
counselor	9	x
hammer	6	
despite	7	x
woman	5	x
murders	7	
TOTAL	107	6

BLACK

Word	Number of letters in word	Word occurs 29/million or less
win	3	
money	5	
dead	4	
coitus	6	x
for	3	
navel	5	x
cockroach	9	x
evil	4	
brother	7	
sexual	6	x
exclude	7	x
minister	8	
distaste	8	x
bludgeon	8	x
hand	4	
terror	6	
bit	3	
friend	6	
knife	5	
moon	4	
TOTAL	111	7

ORANGE

Word	Number of letters in word	Word occurs 29/million or less
ten	3	
water	5	
ugly	4	
emotional	9	x
worry	5	
pleasant	8	
red	3	
alienate	8	x
breast	6	
family	6	
trap	4	
kill	4	
estrange	8	x
and	3	
neophyte	8	x
psychotic	9	x
tragic	6	x
role	4	
bastard	7	x
come	4	
TOTAL	109	7

RED

Word	Number of letters in word	Word occurs 29/million or less
dog	3	
kiss	4	
afraid	6	
males	5	
sickness	8	x
wound	5	
too	3	
divorce	7	x
prey	4	x
penis	5	x
justice	7	
bitch	5	x
trouble	7	
sex	3	x
sheep	5	
failure	7	
square	6	
hate	4	
depressed	9	x
merry	5	
TOTAL	108	7

YELLOW

Word	Number of letters in word	Word occurs 29/million or less
vie	3	x
doctor	6	
ineffective	11	x
hit	3	
whistle	7	
good	4	
screen	6	
intercourse	11	x
push	4	
father	6	
apathy	6	x
quiet	5	
vile	4	x
quilt	5	x
religion	8	
two	3	
trainee	7	
pray	4	
vagina	6	x
worry	5	
TOTAL	115	7

APPENDIX E

NUMBER LISTS

NUMBER LISTS

Brown	Yellow	Orange
01	64	95
105	103	073
324	3733	967490
4439	326234	537
246271	47869	7880
11016	710	56460
38268	740123	953205
084298	6001	34691
379482	38040	323564
9405	975919	88434
9975	73508	4455

Green	Black	Red
23	84	17
055	774	381
495401	31591	662242
148	8841	7965
070925	366303	86669
9731	64167	206283
3897	597909	39323
11742	513	60626
43361	4916	4827
367687	83054	665
93806	840610	620699

APPENDIX F

SAMPLE CLOSURE ITEMS AND SCHEDULE OF FIGURE SIZES

SCHEDULE OF DIMENSIONS OF EQUILATERAL TRIANGLES DRAWN AND PHOTOGRAPHED FOR THE CLOSURE THRESHOLD TASK

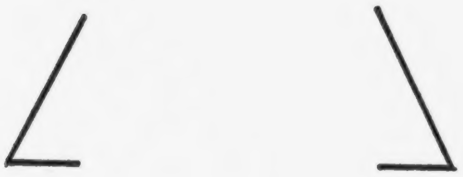
Percent Perimeter	Length of leg in cm.	Length of base in cm.
35.0	3.15	1.57
37.5	3.37	1.65
40.0	3.60	1.80
42.5	3.82	1.91
45.0	4.05	2.02
47.5	4.275	2.13
50.0	4.50	2.25
52.5	4.725	2.36
55.0	4.95	2.83
57.5	5.175	2.58
60.0	5.40	2.70
62.5	5.665	2.83
65.0	5.85	2.97
67.5	6.075	3.03
70.0	6.30	3.15
72.5	6.525	3.26
75.0	6.75	3.37
77.5	6.975	3.48
80.0	7.20	3.60
82.5	7.425	2.71
85.0	7.65	3.82
87.5	7.875	3.43
90.0	8.10	4.05
92.5	8.325	4.16
95.0	8.55	4.27

TWO SAMPLE FIGURES FOR CLOSURE THRESHOLD TASK

Characteristics | Figure

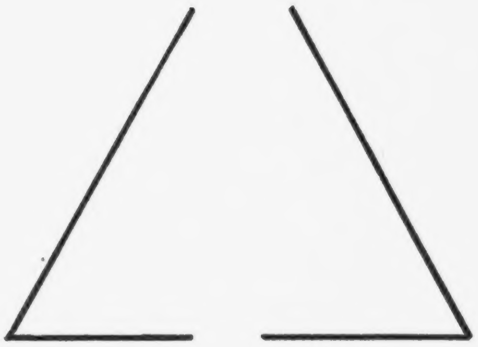
This figure is usually seen as having a quality of "Twoness."

The amount of perimeter represented here is about thirty-five per cent.



This figure is usually seen as having a quality of "Oneness."

The amount of perimeter represented here is about ninety per cent.



Note: The figures photographed and used in the study were drawn from a nine centimeter equilateral triangle (approximately 3-1/2 inches on one side). The actual projected image was slightly over eight inches on one side.

APPENDIX G

ORAL READING PASSAGES

"Why don't you go back to your ship, sailor? You wouldn't want to sit in the tank and miss your tide, now would you, sailor?" And the speaker wouldn't recognize you five minutes later. And the Lion and Unicorn on my cap made me even more anonymous. But I must warn anyone testing my theory, never try it away from a shipping port.

"Where you from?" the driver asked with a complete lack of interest.

"Liverpool."

"Limey, hum? Well, you'll be all right. It's the goddamn New York Jews cause all the trouble."

I found myself with a British inflection and by no means one of Liverpool. "Jews--what? How do they cause trouble?"

"Why, hell, mister. We know how to take care of this. Everybody's happy and getting along fine. Why, I like niggers. And them goddamn New York Jews come in and stir the niggers up. They just stay in New York there wouldn't be no trouble. Ought to take them out."

"You mean lynch them?"

"I don't mean nothing else, mister."

He let me out and I started to walk away. "Don't try to get too close, mister," he called after me. "Just you enjoy it but don't mix in."

"Thanks," I said, and killed the "awfully" that came to my tongue.

As I walked toward the school I was in a stream of people all white and all going in my direction. They walked intently like people going to a fire after it has been burning for some time. They beat their hips or hugged them under coats, and many men had scarves under their hats and covering their ears.

"I could make you a cake. Have to be hotcake mix because that's what I have. Plenty of syrup and a candle on the top."

Charley watched the operation with some interest. His silly tail made delicate conversation. "Anybody saw you make a birthday cake for a dog that he don't even know when's his birthday would think you were nuts."

"If you can't manage any better grammar than that with your tail, maybe it's a good thing you can't talk."

It turned out pretty well--four layers of hotcakes with maple syrup between and a stub of a miner's candle on top. I drank Charley's health in straight whisky as he ate and licked up the syrup. And then we both felt better. But there was Narvaez' party--eight years. There were men in those days.

Charley licked the syrup from his whiskers. "What makes you so moody?''

"It's because I've stopped seeing. When that happens you think you'll never see again."

He stood up and stretched himself, first fore and then aft. "Let's take a stroll up the hill," he suggested. "Maybe you've started again."

We inspected the pile of broken whisky bottles and then continued up the trail. The dry, frozen air came out of us in plumes of steam. Some fairly large animal went leaping up the broken stone hill, or maybe a small animal and a big little avalanche.

"What does your nose say that was?"

"Nothing I recognize. Kind of a musky smell. Nothing I'm going to chase either."

So dark was the night that it was prickled with firey dots. My light brought an answering flash up the steep rocky bank. I climbed up, slipping and floundering, lost the echoed light and found it again, a good littly new-split stone with a piece of mica in it--not a fortune but a good thing to have. I put it in my pocket and we went to bed.

"How do you mean lost?" she said.

The cook leaned through his window and rested bare elbows on the serving counter.

"I want to go to Sauk Center and I don't seem to be getting there."

"Where'd you come from?"

"Minneapolis."

"Then what you doing this side of the river?"

"Well, I seem to have got lost in Minneapolis, too."

She looked at the cook. "He got lost in Minneapolis," she said.

"Nobody can get lost in Minneapolis," the cook said. "I was born there and I know."

The waitress said, "I come from St. Cloud and I can't get lost in Minneapolis."

"I guess I brought some new talent to it. But I want to go to Sauk Center."

The cook said, "If he can stay on a road he can't get lost. You're on Fifty-two. Cross over at St. Cloud and stay on Fifty-two."

"Is Sauk Center on Fifty-two?"

"Ain't no place else. You must be a stranger around here, getting lost in Minneapolis. I couldn't get lost blindfolded."

I said a little snappishly, "Could you get lost in Albany or San Francisco?"

"I never been there but I bet I wouldn't get lost."

"I been to Duluth," the waitress said. "And Christmas I"m going to Sioux Falls. I got a aunt there."

"Ain't you got relatives in Sauk Center?" the cook asked.

"Sure, but that's not so far away--like he says San Francisco. My brother's in the Navy. He's in San Diego. You got relations in Sauk Center?"

"No, I just want to see it. Sinclair Lewis came from there."

"You use that?"

"Yes, but I don't steal it. I tell about hearing Sir John, and what it did to me, and then I say I'm going to try to give an impression of how he did it."

"Clever."

"Well, it does help, because it gives authority to the performance, and Shakespeare doesn't need billing, and that way I'm not stealing his material. It's like I'm celebrating him, which I do."

"How do they respond?"

"Well, I guess I'm pretty much at home with it now, because I can watch the words sink in, and they forget about me and their eyes kind of turn inward and I'm not a freak to them anymore. Well--what do you think?"

"I think Gielgud would be pleased."

"Oh! I wrote to him and told him what I was doing and how I was doing it, a long letter." He brought a lumpy wallet from his hip pocket and extracted a carefully folded piece of aluminum foil, opened it, and with careful fingers unfolded a small sheet of notepaper with the name engraved at the top. The message was typed. It said, "Dear . . .: Thank you for your kind and interesting letter. I would not be an actor if I were not aware of the sincere flattery implied in your work. Good luck and God bless you. John Gielgud."

I sighed, and I watched his reverent fingers fold the note and close it in its armor of foil and put it away. "I never show that to anyone to get a show," he said. "I wouldn't think of doing that."

And I'm sure he wouldn't.

He whirled his plastic glass in his hand and regarded the rinse of whisky left in it, a gesture often designed to draw emptiness to the attention of a host. I uncorked the bottle.

For some reason he was getting a little easier, even permitted himself a chuckle that could have turned to throat-clearing if he saw a bad reaction from me.

I asked, "Anybody know any Russians around here?"

And now he went all out and laughed. "Course not. That's why they're valuable. Nobody can find fault with you if you take out after the Russians."

"Because we're not doing business with them?"

He picked up a cheese knife from the counter and carefully ran his thumb along the edge and laid the knife down. "Maybe that's it. By George, maybe that's it. We're not doing business."

"You think then we might be using the Russians as an outlet for something else, for other things."

"I didn't think that at all, sir, but I bet I'm going to. Why, I remember when people took everything out on Mr. Roosevelt. Andy Larsen got red in the face about Roosevelt one time when his hens got the croup. Yes, sir," he said with growing enthusiasm, "those Russians got quite a load to carry. Man has a fight with his wife, he belts the Russians."

"Maybe everybody needs Russians. I'll bet even in Russia they need Russians. Maybe they call it Americans."

He cut a sliver of cheese from a wheel and held it out to me on the knife blade. "You've given me something to think about in a sneaking kind of way."

"I thought you gave it to me."

"How?"

"About business and opinions."

"Well, maybe so. Know what I'm going to do? Next time Andy Larsen comes in red in the face, I'm going to see if the Russians are bothering his hens. It was a great loss to Andy when Mr. Roosevelt died."

But this young man's fingers found the place behind the ears Charley delights to have rubbed, and he signed contentedly and sat down.

"What you doing--going hunting? I see your guns in the truck."

"Just driving through. You know how you see a place and it's just right, and you're just tired enough, I guess you can't help stopping."

"Yeah," he said. "I know what you mean. You got a nice outfit."

"I like it and Charley likes it."

"Charley? Never heard of a dog named Charley. Hello, Charley."

"I wouldn't want to get you in trouble with your boss. Think I ought to drag ass now?"

"What the hell?" he said. "He ain't here. I'm in charge. You ain't doing no harm."

"I'm trespassing."

"Know something? Fella camped here, kind of a nut. So I came to kick him off. He said something funny. He says, 'Trespassing ain't a crime and ain't a misdemeanor.' He says it's a tort. Now what the hell does that mean? He was a kind of a nut."

"Search me," I said, "I'm not a nut. Let me warm up your coffee." I warmed it two ways.

"You make swell coffee," said my host.

"Before it gets too dark I've got to find a place to park. Know any place up the road where they'll let me stay the night?"

"If you pull over that way behind those pine trees nobody could see you from the road."

"But I'd be committing a tort."

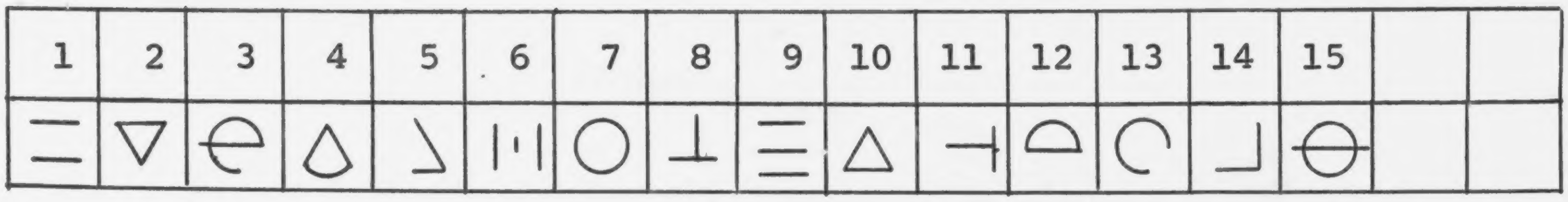
"Yeah. I wish to Christ I knew what that meant."

He drove ahead of me in the jeep and helped me find a level place in the pine grove.

APPENDIX H

CODING TASKS

NUMBER-CODE TEST (BROWN)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8	7	11	1	1	1	3	10	10	3	4	5	4	8	2	13	10
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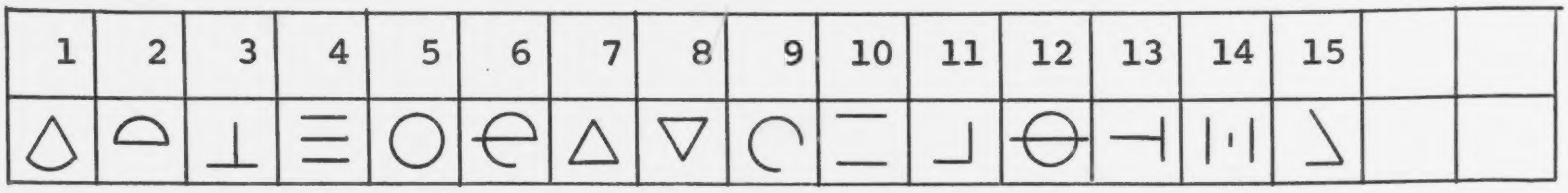
NUMBER-CODE TEST (GREEN)



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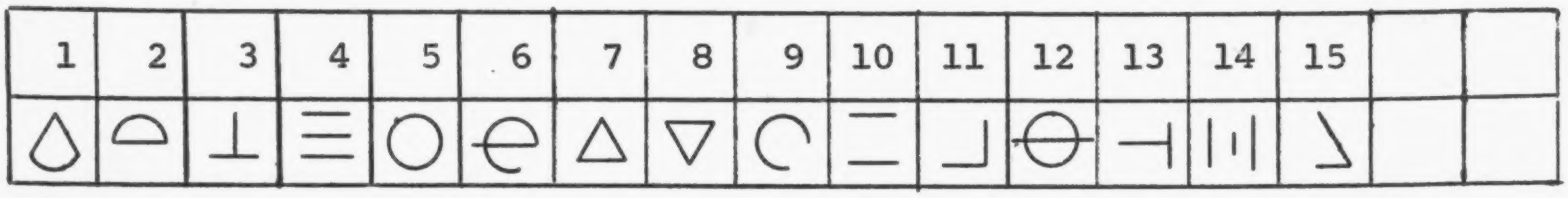
1	13	14	4	7	8	3	12	2	8	7	5	4	7	3	13	7
10	1	11	12	2	15	10	14	2	8	4	8	5	4	4	12	2
13	8	10	9	6	10	9	11	10	7	8	2	6	7	4	12	4
5	10	6	8	10	11	1	11	6	1	13	11	9	7	11	14	5

NUMBER-CODE TEST (YELLOW)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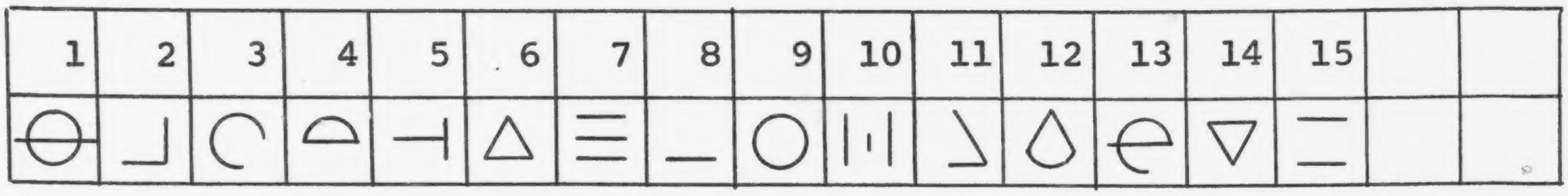
7	13	3	7	4	5	7	8	2	12	3	8	7	4	14	13	1
3	8	12	7	3	8	15	3	6	5	5	6	11	3	1	15	7
8	2	4	10	7	5	6	2	11	1	2	6	7	5	1	6	12

NUMBER - CODE TEST (BLACK)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12	8	6	5	3	1	4	1	1	3	1	3	6	1	14	12	14
11	5	14	5	13	6	4	5	1	5	1	8	4	2	4	9	15

NUMBER-CODE TEST (RED)

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8	4	14	3	6	1	11	12	13	9	12	8	14	9	12	10	7
14	1	5	5	13	10	12	13	2	12	12	2	5	1	8	4	2

NUMBER-CODE TEST (ORANGE)

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10	13	2	8	4	5	4	3	10	10	3	1	1	1	11	7	8
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13	12	11	12	4	14	2	14	6	8	1	5	5	13	2	13	5
13	6	12	7	15	15	12	10	1	6	2	10	8	4	8	8	1
5	2	12	8	12	2	13	9	5	11	6	7	8	4	10	6	12

APPENDIX I

INSTRUCTIONS

INSTRUCTIONS

Ask subjects not to discuss the tests. Also ask subjects to confirm the time for the next testing.

WOULD YOU PLEASE FILL OUT THE INFORMATION ON THE FRONT OF YOUR TEST BOOKLET.

Form 17

IN A FEW MOMENTS YOU ARE GOING TO TAKE A TEST WHICH WILL MEASURE SOME POTENTIAL QUALITIES OF EFFECTIVE COUNSELING. THERE ARE TWO PARTS TO THE TEST. FIRST, YOU WILL LISTEN TO A BRIEF EXCERPT OF A COUNSELING SESSION. TRY TO IMAGINE THAT YOU ARE THE COUNSELOR TO WHOM THIS CLIENT IS SPEAKING. AFTER THE TAPE IS FINISHED, YOU WILL BE ASKED TO PERFORM CERTAIN TASKS IN THE FOLLOWING ORDER:

FIRST, WRITE DOWN WHAT YOU SEE FLASHED ON A SCREEN

SECOND, READ A PASSAGE ORALLY, INTO A TAPE RECORDER

THIRD, DO A NUMBER CODE TEST

BECAUSE OF THE NATURE OF THE TEST, YOU MAY NOT ASK QUESTIONS ONCE THE TEST SEQUENCE INCLUDING THE TAPE LISTENING BEGINS. THIS MEANS THAT YOU WILL BE GIVEN ALL INSTRUCTIONS TO ALL THE TESTS NOW.

PLEASE TURN TO THE FIRST PAGE IN YOUR BOOKLET NOW.

Rapid Perception Test. IMMEDIATELY FOLLOWING THE TAPE EXCERPT YOU WILL TAKE THE RAPID PERCEPTION TEST. THIS TEST REQUIRES THAT YOU WRITE DOWN WHAT YOU SEE FLASHED ON THE SCREEN IN FRONT OF YOU. THE MANILLA EDGES ON THE SCREEN OUTLINE THE AREA WHERE THE FLASHES WILL OCCUR. IN COLUMN ONE, YOU SHOULD WRITE DOWN ANY WORD OR PART OF A WORD THAT YOU SEE. IN COLUMN TWO, YOU SHOULD WRITE DOWN ANY NUMBER OR PART OF A NUMBER THAT YOU SEE. IN COLUMN THREE, YOU SHOULD CHECK ONE OF THE TWO COLUMNS APPROPRIATE TO WHETHER YOU SEE TWO SEPARATE ANGLES (TWONESS) OR ONE FIGURE (ONENESS). MORE ABOUT THE FIGURES IN A FEW MINUTES.

THE TIME DURING WHICH THE WORD, NUMBER OF FIGURE WILL BE ON THE SCREEN IS VERY SHORT SO YOU MUST DIRECT ALL OF YOUR ATTENTION TO WATCHING THE SCREEN. IF YOU WEAR GLASSES BE SURE TO PUT THEM ON NOW.

NOW I AM GOING TO SHOW YOU FIVE EXAMPLES OF THE WORDS. CONCENTRATE ON THE SCREEN AND WRITE DOWN WHAT YOU SEE IN COLUMN ONE. I WILL SAY "READY" BEFORE THE WORD IS FLASHED. (Flash the first word several times if necessary.)

ANY QUESTIONS? (Answer any questions of procedure.)

NOW, I AM GOING TO SHOW YOU A FEW EXAMPLES OF THE NUMBERS. WRITE DOWN WHAT YOU SEE, IN COLUMN TWO.

ANY QUESTIONS? (Answer any questions of procedure.)

(Open the shutter on the projector--or remove the whole t-scope.)

NOW PLEASE LOOK AT THE SCREEN. HERE ARE TWO INCOMPLETE FIGURES. THE ONE ON YOUR RIGHT IS A NEARLY COMPLETE FIGURE WHILE THE ONE ON YOUR LEFT IS RELATIVELY INCOMPLETE. DO THESE FIGURES LOOK MARKEDLY DIFFERENT TO YOU? WOULD YOU AGREE TO THE STATEMENT THAT THE TWO ANGLES ON THE RIGHT APPEAR TO BELONG TOGETHER AS PARTS OF THE SAME FIGURE, WHILE THOSE ON THE LEFT DO NOT APPEAR TO BE CLOSELY RELATED TO EACH OTHER IN ANY ONE DEFINITE WAY; THAT IN OTHER WORDS, THE RIGHT HAND ANGLES HAVE A QUALITY OF ONENESS WHILE THE LEFT HAND ANGLES HAVE A QUALITY OF TWONESS? (Pause and answer questions if they are evident.)

OBVIOUSLY, IF I SHOULD SLOWLY INCREASE THE LENGTH OF LINES FORMING THE LEFT HAND ANGLES, BY ADDING SMALL AMOUNTS TO THEM, THEY WOULD AT SOME POINT LOSE THEIR QUALITY OF TWONESS AND ACQUIRE THE QUALITY OF ONENESS POSSESSED BY THE RIGHT HAND ANGLES.

YOU WILL BE ASKED TO JUDGE JUST SUCH A SET OF FIGURES, CHECKING THE COLUMN ON YOUR ANSWER SHEET WHICH IS APPROPRIATE IN YOUR JUDGMENT. ONCE YOU HAVE SEEN THE CHANGE FROM ONENESS TO TWONESS OR TWONESS TO ONENESS, YOU SHOULD PLACE AN "X" IN THAT COLUMN WHICH YOU HAVE NOT BEEN MARKING AND STOP LOOKING AT THE SCREEN.

IN SOME OF THE SERIES YOU WILL START WITH A RELATIVELY

COMPLETE FIGURE, SUCH AS THE ONE AT THE RIGHT, WHILE IN OTHERS YOU WILL START WITH A RELATIVELY INCOMPLETE FIGURE SUCH AS THE ONE AT THE LEFT.

NOW I AM GOING TO SHOW YOU THE WHOLE SERIES WITHOUT FLASHING THEM AT A HIGH RATE OF SPEED SO THAT YOU MAY GET A BETTER IDEA OF WHAT YOU ARE SUPPOSED TO DO. TRY TO JUDGE WHERE YOU SEE THE FIGURES CHANGE IN CHARACTER. IT IS NOT NECESSARY TO MARK THE SAMPLE ANSWER SHEET! (Show them the whole series.) DO YOU HAVE ANY QUESTIONS? (Answer any questions--explain the change in the directions--they have a sample on their instruction sheet which may be confusing.)

Oral Reading Test. THE SECOND TEST YOU WILL TAKE WILL REQUIRE THAT YOU READ ORALLY INTO A TAPE RECORDER FROM A SELECTION I WILL GIVE TO YOU. ALL THAT YOU MUST DO IS READ YOUR NAME AND THEN THE SELECTION WHEN I INDICATE TO YOU THAT WE ARE READY TO BEGIN. YOU ARE NOT ALLOWED TO TRACE WITH YOUR FINGER OR PREREAD THE SELECTION.

(if two people) BECAUSE OF THE FACT THAT TWO OF YOU ARE TAKING THE TEST TOGETHER, I WILL HAVE TO ASK ONE OF YOU TO LEAVE THE ROOM WHILE THE OTHER IS READING. WOULD YOU (designate one of the two) BE WILLING TO READ FIRST THIS TIME?

Number-Code Test. THE THIRD TEST IS A NUMBER-CODE TEST. NOW WOULD YOU TURN TO THE NEXT PAGE AND READ ALONG

WITH ME. ON ONE OF THE NEXT PAGES YOU WILL FIND A ROW OF 15 NUMBERS WITH A SYMBOL LISTED BELOW EACH NUMBER. BELOW THE KEY WILL BE ROWS OF NUMBERS WITHOUT THE SYMBOL. YOU ARE TO FILL IN THE SYMBOL WHICH CORRESPONDS TO THE NUMBER: DOING AS MANY AS YOU CAN WITHIN THE TIME LIMIT. WHEN YOU FINISH A LINE GO ON TO THE NEXT. DO NOT SKIP ANY NUMBERS IN A LINE. LISTED BELOW IS A SAMPLE KEY. FILL IN THE SAMPLE ROW SO THAT YOU HAVE THE IDEA OF WHAT YOU ARE SUPPOSED TO DO. (Allow time for them to complete sample.) NOW, DO YOU HAVE ANY FURTHER QUESTIONS? (Answer any questions.)

Form 17 Actual Experiment

IF YOU HAVE NO FURTHER QUESTIONS, I WILL PLAY THE FIRST EXCERPT AND THEN WE WILL DO THE RAPID PERCEPTION TEST WORD SERIES WHEN THE TAPE IS THROUGH. TRY TO IMAGINE THAT YOU ARE THE COUNSELOR TO WHOM THIS COUNSELEE IS SPEAKING.

(Play the tape. Then, stop the tape.)

NOW PLEASE WATCH THE SCREEN AND WRITE DOWN ANY WORD OR PART OF A WORD THAT YOU SEE, IN COLUMN I ON YOUR ANSWER SHEET. I WILL SAY "READY" BEFORE EACH SLIDE. (At the end of the twentieth slide say:)

NOW PLEASE WATCH THE SCREEN AND WRITE DOWN ANY NUMBER OR PART OF A NUMBER THAT YOU SEE. (At the end of the eleventh slide say:)

NOW PLEASE WATCH THE SCREEN AND CHECK THE COLUMN ON

YOUR ANSWER SHEET APPROPRIATE TO WHETHER YOU SEE TWO SEPARATE ANGLES (TWONESS) OR ONE FIGURE (ONENESS). REMEMBER TO STOP WHEN YOU FIRST SEE THE CHANGE FROM ONE TYPE TO THE OTHER.

Oral Reading. WOULD YOU PLEASE LEAVE WHILE MR. --- READS. MAY I HAVE YOUR BOOKLET WHILE YOU READ THIS SELECTION. DON'T FORGET TO READ YOUR NAME FIRST. YOU MAY BEGIN. (Make sure the tape recorder and the stopwatch are going.) (Repeat for other subject.)

Number-Code. WHEN I GIVE YOU THE SIGNAL, YOU MAY TURN THE PAGE AND BEGIN, REMEMBER THAT YOU CANNOT SKIP ANY FIGURES IN A ROW AND THAT YOU MAY GO ON TO THE NEXT WHEN YOU HAVE FINISHED ONE. READY, BEGIN. (Start watch for two minutes.)

Form 43

Following the completion of the previous tests (Form 17) say: DO YOU HAVE ANY QUESTIONS ABOUT WHAT YOU HAVE JUST DONE? Answer only questions of procedure. Any questions about the test itself will have to be answered by saying: I'M SORRY BUT I CANNOT TELL YOU NOW BUT I WILL BE ABLE TO TELL YOU AFTER THE THIRD WEEK OF THE EXPERIMENT.

LET US GO ON THEN, TO THE NEXT TAPE. THE PROCEDURES AND TESTS ARE THE SAME AS BEFORE, BUT THE ORDER IS DIFFERENT. FIRST, YOU WILL LISTEN TO A BRIEF EXCERPT OF A COUNSELING SESSION, TRYING TO IMAGINE THAT YOU ARE THE COUNSELOR TO WHOM THIS COUNSELEE IS SPEAKING. AFTER THE TAPE IS FINISHED, YOU WILL DO THE SAME TASKS BUT IN THE FOLLOWING ORDER:

FIRST, YOU WILL READ ORALLY INTO A TAPE RECORDER

SECOND, YOU WILL DO A NUMBER-CODE TEST

THIRD, YOU WILL DO A RAPID PERCEPTION TEST: FIGURES, NUMBERS, AND WORDS.

DO YOU HAVE ANY QUESTIONS? (Answer any questions.)

Form 43 Actual Experiment

IF YOU HAVE NO FURTHER QUESTIONS I WILL PLAY THE SECOND EXCERPT. TRY TO IMAGINE THAT YOU ARE THE COUNSELOR TO WHOM THIS COUNSELEE IS TALKING. IMMEDIATELY FOLLOWING THIS WE WILL DO THE ORAL READING TEST. (If two people, E designates the S who read last before, to read first this time.) WOULD YOU PLEASE READ FIRST THIS TIME.

(Play the tape. Then, stop the tape.)

NOW WOULD YOU PLEASE LEAVE WHILE MR. --- READS. MAY I HAVE YOUR TEST BOOKLET? THANK YOU. DON'T FORGET YOUR NAME FIRST. YOU MAY BEGIN. (Start tape recorder and stop watch.) THANK YOU. (Now have the other S read.)

NOW WE WILL DO THE NUMBER-CODE TEST. REMEMBER TO DO EVERYONE AND CONTINUE THE MINUTE YOU HAVE FINISHED A ROW. YOU MAY BEGIN. (Start the watch) STOP! (after two minutes)

TURN PAGE. NOW WE ARE GOING TO DO THE RAPID PERCEPTION TEST. FIRST, I AM GOING TO SHOW YOU SOME FIGURES. WATCH THE SCREEN AND CHECK THE COLUMN ON YOUR ANSWER SHEET

APPROPRIATE TO WHETHER YOU SEE TWO SEPARATE ANGLES (TWONESS) OR ONE FIGURE (ONENESS). REMEMBER TO STOP WHEN FIRST YOU SEE THE CHANGE FROM ONE FIGURE TO THE OTHER. (show the slides) NOW PLEASE WATCH THE SCREEN AND WRITE DOWN ANY NUMBER OR PART OF A NUMBER THAT YOU SEE. (show the eleven slides) NOW PLEASE WATCH THE SCREEN AND WRITE DOWN ANY WORD OR PART OF A WORD THAT YOU SEE PROJECTED ON THE SCREEN. (show the twenty slides)

YOU ARE ALL THROUGH THE TESTING FOR THIS WEEK. PLEASE DO NOT DISCUSS THE TESTS. DO YOU HAVE ANY PROBLEMS OR CONFLICTS WITH YOUR SCHEDULE WHICH WOULD MAKE IT IMPOSSIBLE FOR YOU TO PARTICIPATE AT THIS TIME NEXT WEEK? (try to accommodate any difficulties; note changes on the master schedule. Remember that scheduling with another person may only be accomplished if the subjects are in the same sub group.)

Week II

Form 65

THIS WEEK WE ARE GOING TO REPEAT THE BASIC PROCESSES WHICH WE DID LAST WEEK. YOU ARE AGAIN TO LISTEN TO A TAPE IMAGINING THAT YOU ARE THE COUNSELOR TO WHOM THIS COUNSELEE IS SPEAKING. FOLLOWING THE TAPE LISTENING, YOU WILL PERFORM SIMILAR BUT DIFFERENT TASKS TO THOSE DONE PREVIOUSLY. THE ONLY DIFFERENCES, THEN, ARE THAT YOU WILL HEAR A DIFFERENT

SET OF TAPE EXCERPTS AND THAT YOU WILL PERFORM THE TESTS IN A DIFFERENT ORDER.

TO ILLUSTRATE: FIRST YOU WILL LISTEN TO A TAPE IMAGINING THAT YOU ARE THE COUNSELOR TO WHOM THE CLIENT IS SPEAKING, AND THEN YOU WILL DO THE FOLLOWING TASKS IN THE FOLLOWING ORDER:

FIRST, YOU WILL DO A NUMBER-CODE TEST

SECOND, YOU WILL DO THE RAPID PERCEPTION TEST SEEING NUMBERS, THEN FIGURES, AND FINALLY WORDS.

THIRD, YOU WILL READ ORALLY INTO THE TAPE RECORDER. (If there are two, say: WOULD YOU PLEASE BE THE FIRST ONE TO READ WHEN WE COME TO THAT TEST?)

DO YOU HAVE ANY QUESTIONS ABOUT HOW THE TESTS WORK OR WHAT YOU ARE SUPPOSED TO DO? (answer any questions)

NOW PLEASE LISTEN TO THE TAPE. AFTER IT IS FINISHED WE WILL DO THE NUMBER-CODE TEST. LISTEN TO THE TAPE IMAGINING THAT YOU ARE THE COUNSELOR TO WHOM THIS INDIVIDUAL IS SPEAKING. (At the end of the tape administer the number-code test. At the end of the number-code test say:) STOP!

PLEASE TURN TO THE NEXT PAGE. WE ARE GOING TO DO THE RAPID PERCEPTION TEST. FIRST, WE WILL SEE THE NUMBERS. WRITE DOWN ANY NUMBER OR PART OF A NUMBER THAT YOU SEE. READY (At the end of the number section, change trays to the Figures, adjust the shutter of 1/10th exposure time, and say:)

NOW WE ARE GOING TO SEE SOME FIGURES. REMEMBER THAT YOU ARE TO CHECK ONLY ONE COLUMN IN ACCORDANCE WITH WHETHER YOU SEE TWONESS OR ONENESS, AND THAT ONCE YOU SEE THE CHANGE FROM WHAT YOU ORIGINALLY SAW, TO CHECK THE OTHER COLUMN ONLY ONCE. YOU ARE THROUGH WITH THE TEST ONCE YOU HAVE SEEN THE CHANGE. (after that has been completed, remove the slide tray, replace and say:) NOW WE ARE GOING TO SEE SOME WORDS. WRITE DOWN ANY WORD OR PART OF A WORD THAT YOU SEE IN COLUMN ONE. READY. (at the end of the Rapid Perception Test say:) NOW WE ARE GOING TO DO THE ORAL READING. WOULD YOU PLEASE LEAVE THE ROOM WHILE --- READS. ETC.

Form 43a

NOW WE ARE GOING TO LISTEN TO A SECOND TAPE EXCERPT. FOLLOWING THAT, WE WILL DO THE SAME TASKS IN THE FOLLOWING ORDER:

FIRST, YOU WILL READ ORALLY (if two, WOULD YOU BE THE FIRST ONE TO READ THIS TIME: designate the opposite one from the individual who read first, last time.)

SECOND, YOU WILL DO THE RAPID PERCEPTION TEST, SEEING WORDS, THEN FIGURES, AND FINALLY NUMBERS.

THIRD, YOU WILL DO THE NUMBER CODE TEST.

DO YOU HAVE ANY QUESTIONS. (answer any questions) NOW PLEASE LISTEN TO THIS EXCERPT, IMAGINING THAT YOU ARE THE COUNSELOR TO WHOM THIS CLIENT IS SPEAKING. (start the tape, then stop it) WOULD YOU PLEASE LEAVE THE ROOM WHILE --- READS. (Start tape recorder and stopwatch.)

(At the end of the reading say:) NOW WE ARE GOING TO DO THE RAPID PERCEPTION TEST, PLEASE WATCH THE SCREEN AND WRITE DOWN ANY WORD OR PART OF A WORD THAT YOU SEE IN COLUMN ONE. NOW WE ARE GOING TO DO THE FIGURE TEST. REMEMBER TO CHECK THE COLUMN APPROPRIATE TO WHETHER YOU SEE ANGLES (TWONESS) OR ONE FIGURE (ONENESS). NOW WE ARE GOING TO DO THE NUMBER TEST. WRITE DOWN ANY NUMBER OR PART OF A NUMBER THAT YOU SEE IN COLUMN TWO.

NOW WE WILL DO THE NUMBER-CODE TEST. READY BEGIN.

Week III

Form 65a

AGAIN THIS WEEK WE ARE TRYING TO MEASURE SOME SALIENT QUALITIES WHICH CONTRIBUTE TO EFFECTIVE COUNSELING. THE SAME PROCESSES AND PROCEDURES FOR THE PREVIOUS WEEKS WILL BE REPEATED. AGAIN, YOU WILL LISTEN TO TWO TAPE EXCERPTS IMAGINING THAT YOU ARE THE COUNSELOR TO WHOM THIS COUNSELEE IS SPEAKING. FOLLOWING EACH TAPE EXCERPT YOU WILL PERFORM SIMILAR TASKS TO THOSE YOU HAVE DONE BEFORE.

AFTER THE FIRST TAPE YOU WILL DO THEM IN THE FOLLOWING ORDER:

FIRST, YOU WILL DO A NUMBER-CODE TEST

SECOND, YOU WILL READ ORALLY INTO A TAPE RECORDER

THIRD, YOU WILL DO A RAPID PERCEPTION TEST SEEING NUMBERS, THEN WORDS AND FINALLY FIGURES.

DO YOU HAVE ANY QUESTIONS? (answer any questions) IF YOU HAVE NO FURTHER QUESTIONS, PLEASE LISTEN TO THIS TAPE IMAGINING THAT YOU ARE THE COUNSELOR TO WHOM THIS COUNSELEE IS SPEAKING. (Start the tape. Then stop the tape. Administer the number-code test; then, designate the individual to leave the room while the other reads.)

NOW WE WILL DO THE RAPID PERCEPTION TEST. FIRST WE WILL SEE NUMBERS: WRITE DOWN IN COLUMN II, ANY NUMBER OR PART OF A NUMBER THAT YOU SEE FLASHED ON THE SCREEN. NOW WRITE DOWN IN COLUMN I, ANY WORD OR PART OF A WORD THAT YOU SEE FLASHED ON THE SCREEN. NOW CHECK THE COLUMN APPROPRIATE TO WHETHER YOU SEE TWONESS OR ONENESS.

Form 17a

NOW WE WILL LISTEN TO THE FINAL TAPE EXCERPT. AGAIN YOU ARE TO LISTEN TO THE TAPE IMAGINING THAT YOU ARE THE COUNSELOR TO WHOM THIS COUNSELEE IS SPEAKING. FOLLOWING THE TAPE EXCERPT YOU WILL PERFORM THE TASKS IN THIS ORDER:

FIRST, YOU WILL DO THE RAPID PERCEPTION TEST SEEING FIGURES, THEN NUMBERS, AND FINALLY WORDS.

SECOND, YOU WILL DO THE NUMBER-CODE TEST

THIRD, YOU WILL READ ORALLY INTO THE TAPE RECORDER.

DO YOU HAVE ANY QUESTIONS? (answer any questions) NOW PLEASE LISTEN TO THE TAPE. TRY TO IMAGINE THAT YOU ARE THE COUNSELOR TO WHOM THIS COUNSELEE IS SPEAKING. WE WILL DO THE RAPID PERCEPTION TEST IMMEDIATELY AFTER THIS EXCERPT IS FINISHED. (Start the tape. Stop tape.) NOW PLEASE WATCH THE SCREEN AND CHECK THE COLUMN APPROPRIATE TO WHETHER YOU SEE TWONESS OR ONENESS. READY. NOW PLEASE WATCH THE SCREEN AND WRITE DOWN ANY WORD OR PART OF A WORD THAT YOU SEE, IN COLUMN ONE. NOW PLEASE WATCH THE SCREEN AND WRITE DOWN ANY NUMBER OR PART OF A NUMBER THAT YOU SEE IN COLUMN TWO. NOW WE WILL DO THE NUMBER-CODE TEST. NOW TURN TO THE NEXT PAGE AND BEGIN. FINALLY WE WILL DO THE ORAL READING, WILL YOU PLEASE LEAVE THE ROOM WHILE --- READS.

APPENDIX J

SAMPLE TEST BOOKLET

COUNSELOR TAPE LISTENING TEST

Name:....................

Date:....................

Age: ....

Sex: ....

INSTRUCTIONS

The Rapid Perception Test

This test requires that you write down what you see flashed on a screen. There are three columns on your test sheet. In Column I you should write down any word or part of a word that you see. In Column II you should write down any number or part of a number that you see. In Column III you should check one of the two columns appropriate to whether you see two separate angles (twoness) or one figure (oneness).

The time during which you will be able to see the word, number, or figure is very short so *you must direct all your attention to watching the screen*. If you *wear glasses* be sure that you *have them on*.

SAMPLE ANSWER SHEET

I Word	II Numbers	III Figures Oneness	 Twoness
1.	1.	1.	
2.	2.	2.	
3.	3.	3.	
4.	4.	4.	
5.	5.	5.	

The Oral Reading Test

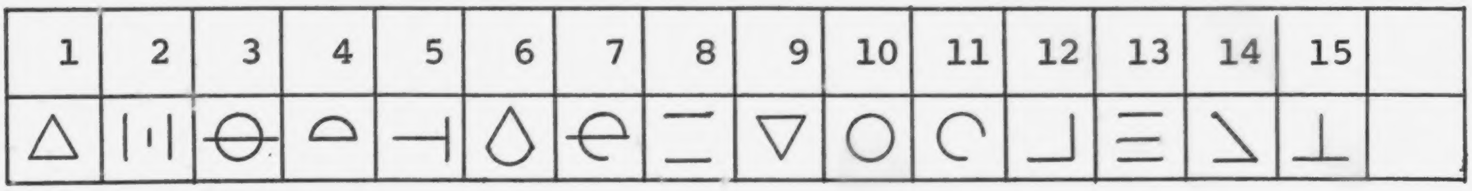
A second test will involve reading a selection orally into a tape recorder. As you are going to be recorded it is essential that you read in a loud clear voice. You are to first read your name then proceed with the selection. You are not permitted to preread the selection or to trace words with your finger.

NUMBER-CODE EXPERIMENT

Instructions:

On the next page you will find a row of 15 numbers with a symbol listed below each number. Below the key will be rows of numbers without the symbol. You are to fill in the symbol which corresponds to the number: doing as many as you can within the time limit. When you finish a line go on to the next. Do not skip any numbers in a line.

Listed below is a sample key:



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
△	|ı|	⊖	⌓	⊣	💧	e	=	▽	○	C	⅃	≡	⦣	⊥	

Fill in the sample row so that you have the idea of what you are supposed to do:

4	8	7	6	11	9	13	12	5	14	1	2	10	3	15	

If you have any questions please ask them now.

If you have no questions, wait for the signal to turn the page and begin coding.

DO NOT TURN THE PAGE UNTIL YOU ARE TOLD TO DO SO.

For some reason he was getting a little easier, even permitted himself a chuckle that could have turned to throat-clearing if he saw a bad reaction from me.

I asked, "Anybody know any Russians around here?"

And now he went all out and laughed. "Course not. That's why they're valuable. Nobody can find fault with you if you take out after the Russians."

"Because we're not doing business with them?"

He picked up a cheese knife from the counter and carefully ran his thumb along the edge and laid the knife down. "Maybe that's it. By George, maybe that's it. We're not doing business."

"You think then we might be using the Russians as an outlet for something else, for other things."

"I didn't think that at all, sir, but I bet I'm going to. Why, I remember when people took everything out on Mr. Roosevelt. Andy Larsen got red in the face about Roosevelt one time when his hens got the croup. Yes, sir," he said with growing enthusiasm, "those Russians got quite a load to carry. Man has a fight with his wife, he felts the Russians."

"Maybe everybody needs Russians. I'll bet even in Russia they need Russians. Maybe they call it Americans."

He cut a sliver of cheese from a wheel and held it out to me on the knife blade. "You've give me something to think about in a sneaking kind of way."

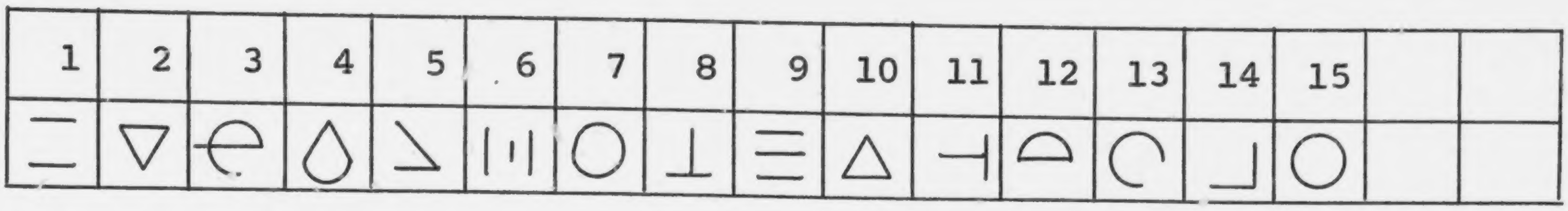
"I thought you gave it to me."

"How?"

"About business and opinions."

"Well, maybe so. Know what I'm going to do? Next time Andy Larsen comes in red in the face, I'm going to see if the Russians are bothering his hens. It was a great loss to Andy when Mr. Roosevelt died."

NUMBER-CODE TEST



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		

12	6	10	4	8	7	6	11	5	9	13	2	12	8	12	2	5
1	8	8	4	8	10	2	6	1	10	12	15	15	7	12	6	13
5	13	2	13	5	5	1	8	6	14	2	14	4	12	11	12	13
7	13	14	5	10	9	5	12	14	14	10	11	2	1	1	6	5
8	7	11	1	1	1	3	10	10	3	4	5	4	8	2	13	10
6	9	14	11	2	14	11	3	15	15	9	11	10	8	13	1	6

RECOGNITION EXPERIMENT

INSTRUCTIONS: In column one you should write any letters or words you see flashed on the screen. In column two you should place an "X" under the appropriate heading in accordance with whether you see two separate angles (twoness) or get an impression of one figure (oneness). You may only mark one of the two columns.

I. WORDS

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________
11. ____________________
12. ____________________
13. ____________________
14. ____________________
15. ____________________
16. ____________________
17. ____________________
18. ____________________
19. ____________________
20. ____________________

II. NUMBERS

1. ________________
2. ________________
3. ________________
4. ________________
5. ________________
6. ________________
7. ________________
8. ________________
9. ________________
10. ________________
11. ________________

III.

	ONENESS	TWONESS
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

APPENDIX K

ANALYSES OF VARIANCE OF THE INTERACTION OF GROUP BY TREATMENT EFFECTS ON SEVEN DEPENDENT VARIABLES

TABLE XIX

ANALYSES OF VARIANCE OF THE INTERACTION OF GROUP BY TREATMENT EFFECTS ON SEVEN DEPENDENT VARIABLES

F Ratios for Group by Treatment Interaction*

		Tachistoprojector			Oral Reading		Coding	
Voice Heard	Group	Word Percep	Number Percep	Closure Threshold	Speed	Errors	Number Coded	Number Errors
Male:								
	Sex	0.757	0.443	0.610	2.314	0.250	0.148	0.398
	Age	0.288	0.420	0.033	0.109	0.041	0.635	1.358
	Exp	0.441	0.795	0.433	2.547	0.764	0.278	0.155
Female:								
	Sex	0.396	0.414	0.642	1.429	2.691	0.023	0.435
	Age	0.214	2.542	1.251	1.884	1.152	2.289	1.002
	Exp	0.874	0.748	0.423	0.062	0.770	0.706	0.272
Both Combined:								
	Sex	0.917	0.001	1.104	2.591	0.609	0.103	0.701
	Age	0.019	1.607	0.828	1.047	0.543	1.246	1.900
	Exp	0.019	0.852	0.129	0.897	0.018	0.470	0.109

*$>P_{.05} = 3.13$ for 2 and 70 df.

$>P_{.01} = 4.92$ for 2 and 70 df.

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